

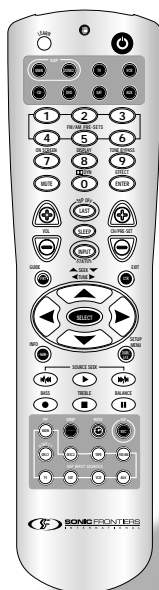
# ANTHEM AVM2

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## OPERATING MANUAL

SOFTWARE VERSION 1.1x

UPDATES: [www.sonicfrontiers.com](http://www.sonicfrontiers.com)



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# 1. INTRODUCTION

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## **Thank you for purchasing the Anthem AVM 2 Surround Sound Processor.**

Sonic Frontiers International (SFI) has been manufacturing high-quality, high-end audio equipment for over a decade. In that time, SFI has built an enviable reputation for products that can recreate the passion music lovers experience when attending a live musical performance. Sonic Frontiers and Anthem products allow audiophiles to almost “be there” each and every time they sit and enjoy their music and surround sound systems in the comfort of their home. SFI provides all this with the highest level of craftsmanship, sophisticated circuit designs, superior quality parts and materials, modern intuitive ergonomics and stylish industrial design.

The AVM 2 is a state-of-the-art three path, A/V Preamplifier / Surround Sound Processor with built-in FM/AM Tuner. It is designed to provide high-end sound and video for both music, home theater and multi-room applications.

### **1.1 ABOUT THIS MANUAL**

Section 1 contains important handling and safety information on installation and maintenance. Section 2 contains a Quick Start Guide which shows you how to connect most popular components to the AVM 2 and get up and running in a matter of minutes. Section 3 describes the Front Panel, Rear Panel and Remote Control layouts of the AVM 2, while Section 4 describes connections in detail. To learn how to operate the AVM 2 from the Front Panel Controls read Section 5. Remote Control operation has a few differences; they are explained in Section 6. To fully explore all the possibilities of the AVM 2, we strongly recommend that you go through the complete setup procedure as explained in Section 7. Future Software Updating is explained in Section 8, followed by the Warranty, Universal Remote Control Codes and complete Specifications.

Reading this manual in its entirety will give you a complete understanding of the full array of features and functions of this highly advanced audio/video component.

### **1.2 RECEIVING AND UNPACKING THE AVM 2**

The AVM 2 is shipped in a reinforced shipping box. Please keep this box for any future shipment. Check that you have received everything in the Packing List below. Report any discrepancies to your dealer as soon as possible. Fill in and mail the Warranty Registration Card within thirty days of purchase.

#### **1.2.1 PACKING LIST**

- AVM 2 Audio/Video Surround Sound Processor
- Power Cord
- AM Loop Antenna
- FM Antenna
- 300-ohm to 75-ohm FM Antenna Adapter
- Remote Control
- 2 'AA' Batteries
- Operating Manual
- Warranty Registration Card

### **1.3 IMPORTANT SAFETY INFORMATION**

- The Front Panel power switches are secondary only; they do not disconnect the AVM 2 from the AC power line, therefore there is always voltage present inside your AVM 2. The use of an adequate and approved surge arrester is highly recommended.
- The following safety instructions must be observed whenever the AVM 2 is operated, moved, or serviced. Failing to comply with any of these instructions or with any precaution or warning contained in this Operating Manual is in direct violation of the standards of design, manufacture, and intended use of the equipment.

# 1. INTRODUCTION continued ...

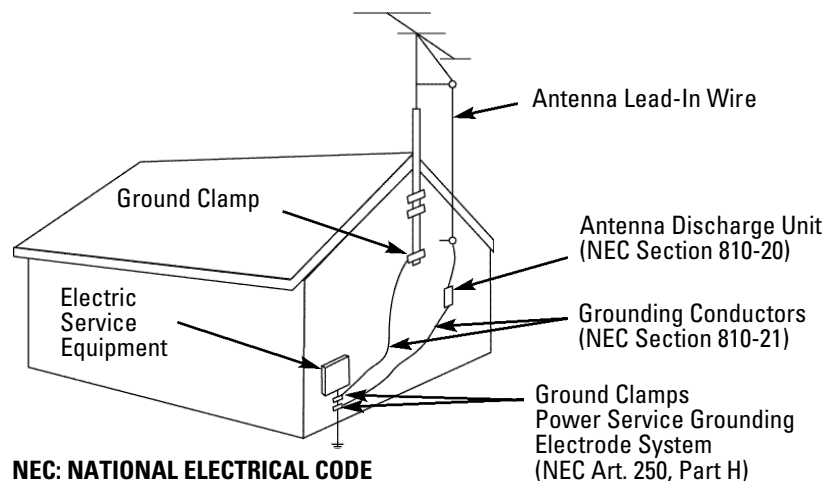
- Neither Anthem, Sonic Frontiers International, our agents, or any related party assume any liability whatsoever for the user's failure to comply with any or all of these requirements.

## 1.3.1 BEFORE OPERATING YOUR AVM 2

- Do not connect power to the AVM 2 if there are signs of damage to any part of its exterior surface.
- Situate the AVM 2 away from heat sources such as radiators, heat registers, stoves, or other any appliances (including power amplifiers) that produce heat.
- Allow two inches (or more) of unobstructed air space above the ventilation slots in the top cover of the AVM 2. Do not obstruct bottom vents by removing the rubber feet or operating the AVM 2 directly on a carpet, sofa, bed, or similar surface.
- Do not place the AVM 2 in a bookcase or component rack without adequate ventilation.
- Install the AVM 2 in a stable location. Do not mount to a wall or from a ceiling.
- Do not use the AVM 2 near water or a wet environment. Do not expose to rain or moisture.

## 1.3.2 OUTDOOR ANTENNA GROUNDING

- If an outside antenna or cable system is connected to the AVM 2, the antenna or cable system must be grounded to provide some protection against voltage surges and built-up static charges. The following diagram contains requirements according to the National Electrical Code:



## 1.3.3 MAINS FUSE TYPE

Use a 1.0 Amp 5mm slow blow fuse only. This is not a user serviceable item (see section 1.3.7).

## 1.3.4 SUPPLY POWER REQUIREMENTS

The AVM 2 can operate from any single phase AC power source that supplies between 105V and 130V at a frequency of 60 Hz.

The AVM 2 uses a polarized power cord with one blade wider than the other so that it only fits into the outlet one way. If the plug cannot be fully inserted with no blade exposed, reverse the plug and try again. If it still does not fit, you have an obsolete outlet – contact an electrician to replace it.

# 1. INTRODUCTION continued ...

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To prevent risk of shock or fire, do not overload wall outlets, extension cords, or convenience receptacles.

Please note that the power transformer primary cannot be changed from a North American to a European or Asian standard.

## 1.3.5 IN-USE NOTICES

- Use only the power supply cord with double insulation as supplied.
- Disconnect the power cord from the AVM 2 before connecting or disconnecting any components.
- Fuses are not a user serviceable item (see section 1.3.7).
- Do not remove the top cover.
- Do not alter or modify the AVM 2 in any way.

## 1.3.6 CLEANING

Unplug the AVM 2 from the wall outlet before cleaning. A regular dusting with a soft, non-abrasive cloth will generally keep the finish of the faceplate and chassis looking new. Do not allow any liquid to come in contact with the AVM 2; it may run onto the internal electronic circuitry and cause damage that is not covered under warranty.

## 1.3.7 SERVICING

Do not attempt to open or perform any repairs to the AVM 2. There are no adjustments inside the AVM 2 that can be made by the user, nor are there any user serviceable parts inside. Refer servicing to qualified service personnel only.

## 1.3.8 NON-USE PERIODS

To prevent damage from power line surges and lightning strikes, unplug the AVM 2 from the power outlet, outside antenna, and cable system when left unused for an extended period of time.

## 1.4 PACKING MATERIALS

Please retain the shipping box and all packing material. They are custom designed to prevent shipping damage from occurring. Do not ship or transport the AVM 2 in anything other than the original box and packing material.



## 2. QUICK START

While the AVM 2 is certainly a massive component with enough features and connections to make your head spin, setup and operation are also very intuitive! With your AVM 2 in front of you, browse through the illustrations in this section showing several quick system hookups. It's as simple as following the lines in the connection diagrams to and from each component.

All of these quick system hookup examples work with the Factory Default settings; none require the Advanced Setup configuration. Just 'plug & play'! However, references to the Advanced Setup section are included to make you aware of the tremendous versatility of the AVM 2.

Even though this section makes it easy to get everything hooked up, for the best sound possible you will still have to calibrate your system in the Setup Menu as outlined in Advanced Setup (section 7). Please do not overlook this important system calibration procedure.

### 2.1 QUICK START GUIDE – Before you start, make sure all components are unplugged.

To connect a CD Player, DVD Player, TV, VCR, Amplifier(s), and Powered Subwoofer to the AVM 2:

- **CD (Digital) to AVM 2** (see 2.2.1-a)  
Connect the **CD Player's Digital Out** (RCA-S/PDIF) to the AVM 2's **DISC2** Digital Audio-IN.
- **CD (Analog) to AVM 2** (see 2.2.1-b)  
Connect **CD Player's L/R Audio Out** (RCA) to any analog input you wish. For this example connect to the AVM 2's **AUX** L/R Audio-IN.
- **DVD Player to AVM 2** (see 2.2.2)  
*Video:* Connect the **DVD Player's Composite Video Out** (RCA) to the AVM 2's **DISC1** Composite-IN.  
*Audio:* Connect the **DVD Player's Digital Out** (RCA-S/PDIF) to the AVM 2's **DISC1** Digital Audio-IN.
- **AVM 2 to TV** (see 2.2.2 or 2.2.3)  
*Video:* Connect the **AVM 2's Composite-Out / MAIN** (RCA) to the TV's Composite Video Input.  
*Audio:* Connect the **TV's L/R Audio Out** (RCA) to the AVM 2's **TV** Analog Audio-IN.
- **VCR to AVM 2** (see 2.2.3)  
*Video:* Connect the **VCR's Composite Video Out** (RCA) to the AVM 2's **VCR** Composite-IN.  
To Record: Connect the **AVM 2's Composite-Out / REC** (RCA) to the VCR's Composite Video Input.  
*Audio:* Connect the **VCR's Left/Right Audio Out** (RCA) to the AVM 2's **VCR** Analog Audio-IN.  
To Record: Connect the **AVM 2's L/R Audio Out / REC** (RCA) to the VCR's Analog Audio-IN.
- **AVM 2 to Amplifier(s)** (see 2.2.4-a or b)  
Connect the **AVM 2's Front-L, Front-R, Sur-L, Sur-R and Center** (RCA or XLR) **Analog Audio-Out** to the Power Amplifier(s)'s Front-L, Front-R, Sur-L, Sur-R and Center Audio Inputs. Follow amplifier manufacturer's instructions for connecting speakers.
- **AVM 2 to Powered Subwoofer** (see 2.2.4-a or b):  
Connect the **AVM 2's Sub** (RCA) **Analog Audio-Out** to the Powered Subwoofer's Line/Low Level Input (RCA).

Reconnect the power to all components and then turn them on. To turn on the AVM 2 press the **POWER – MAIN** button on the front panel.

## 2. QUICK START continued ...

### To Watch a DVD:

- Press **DISC1** Source on the front panel of the AVM 2.
- Switch the TV's Video Input to the one that the AVM 2 Composite-Out is plugged into.
- Place a DVD into the DVD Player and press play. You should see the picture on your TV and hear sound from your speakers. Use the AVM 2 Master Control Knob on the front panel to adjust volume.

### To Watch a Video Tape:

- Press **VCR** Source on the front panel of the AVM 2.
- Switch the TV's Video Input to the one the AVM 2 composite-out is plugged into.
- Insert a tape into the VCR Player and press play. You should see the picture on your TV and hear sound from your speakers. Use the Master Control Knob on the front panel to adjust volume.

### To Listen to a CD:

- Press either the **DISC2** Source (Digital-In S/PDIF) or **AUX** Source (Analog-In Left/Right) on the front panel of the AVM 2.
- Place a CD into the CD Player and press play. You should hear music coming from your speakers. Use the Master Control Knob on the front panel to adjust volume.

#### Note about Digital and Analog Inputs:

- DISC1, DISC2 and SAT are factory default set for Digital Input, whereas TAPE, TV, VCR, and AUX are factory default set for Analog (Left/Right) Inputs. You can however, change any of these to either Digital or Analog as required. In addition, the Digital Input can also be changed from RCA to Toslink or XLR. To make these changes see section 7.4.2.

#### Note about On-Screen Display:

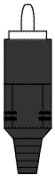
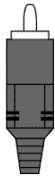
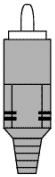




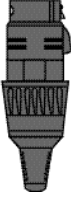

- The On-Screen Display is factory default set for Composite-Out. This can be changed to S-Video or turned off. To make these changes see section 7.4.9 menu 9.b.

#### Note about Your Speakers:

- The AVM 2 allows you to enter information about how many speakers you have in your system, their relative size, and their distance from your listening position. This speaker setup information is important in directing audio signals optimally, ensuring you get the best quality sound from your system. Please see sections 7.4.3, 7.4.4, and 7.4.5.

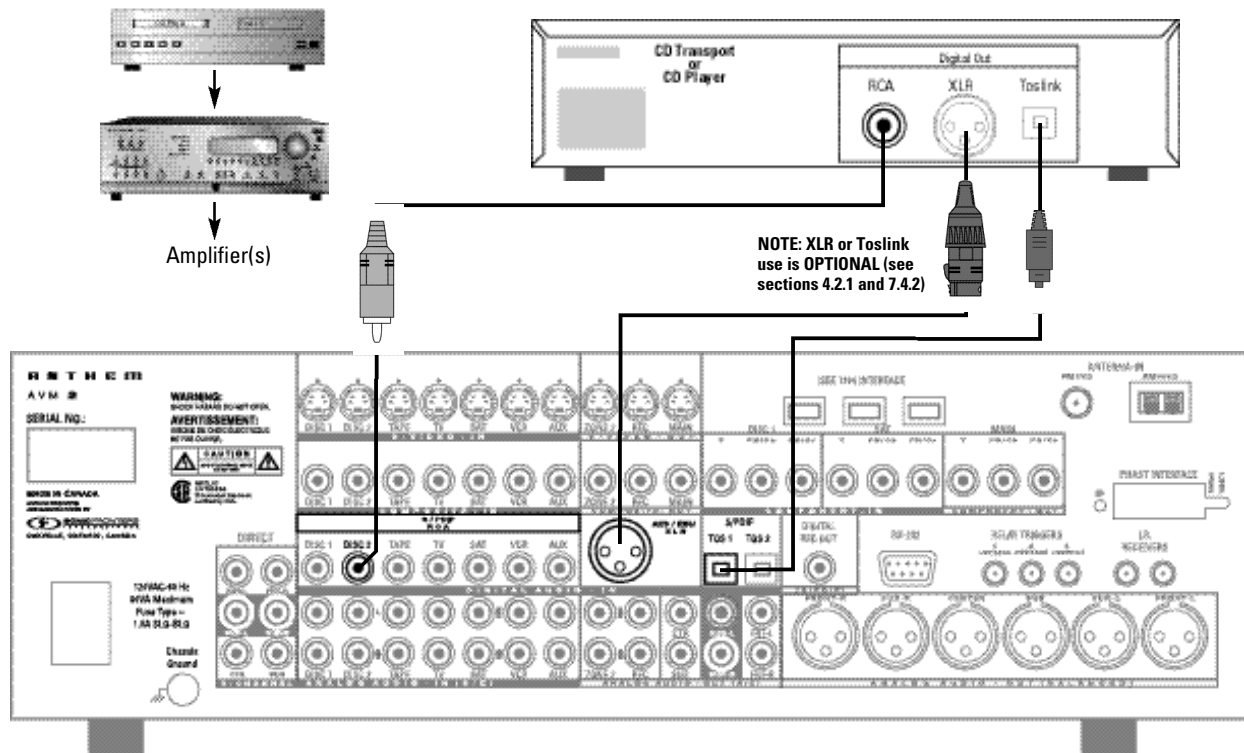
## 2.2 CONNECTOR DIAGRAMS AND DESCRIPTIONS

The following pages of illustrations contain a variety of standard cable/connectors that are used to connect components to your AVM 2. Here's what they are, what they look like, and what they are used for:

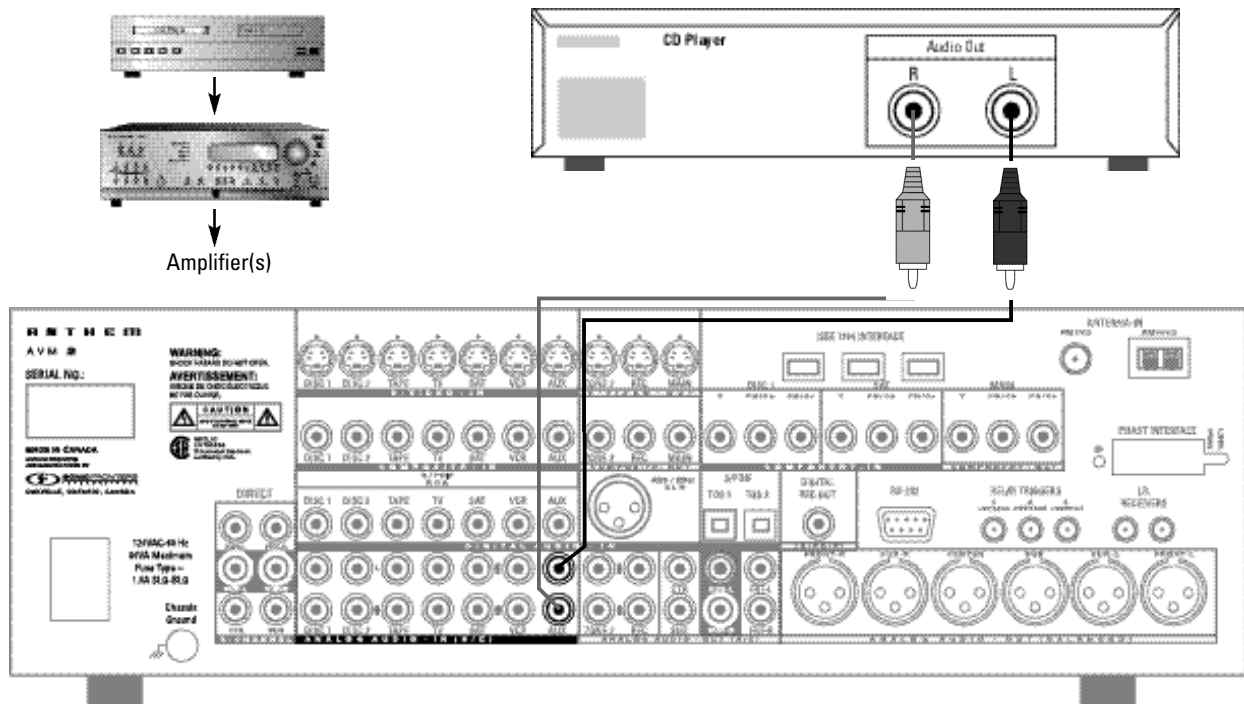
RCA Black or White	RCA Red	RCA Yellow or Brown	1/4" Stereo Plug	3.5mm Mono Mini Plug	5-Pin Mini DIN	Toslink	XLR Female	XLR Male
								
Analog Left Channel	Analog Right Channel	Digital S/PDIF or Composite Video	Headphone	Relay Trigger IR Receiver	S-Video	Digital Audio S/PDIF	Analog Balanced or Digital AES/EBU	Analog Balanced or Digital AES/EBU
RCA Green - Component Y	RCA Blue - Component Pb/Cb	RCA Red - Component Pr/Cr						

## 2. QUICK START continued ...

### 2.2.1-a CD Player or CD Transport to AVM 2 (Digital)

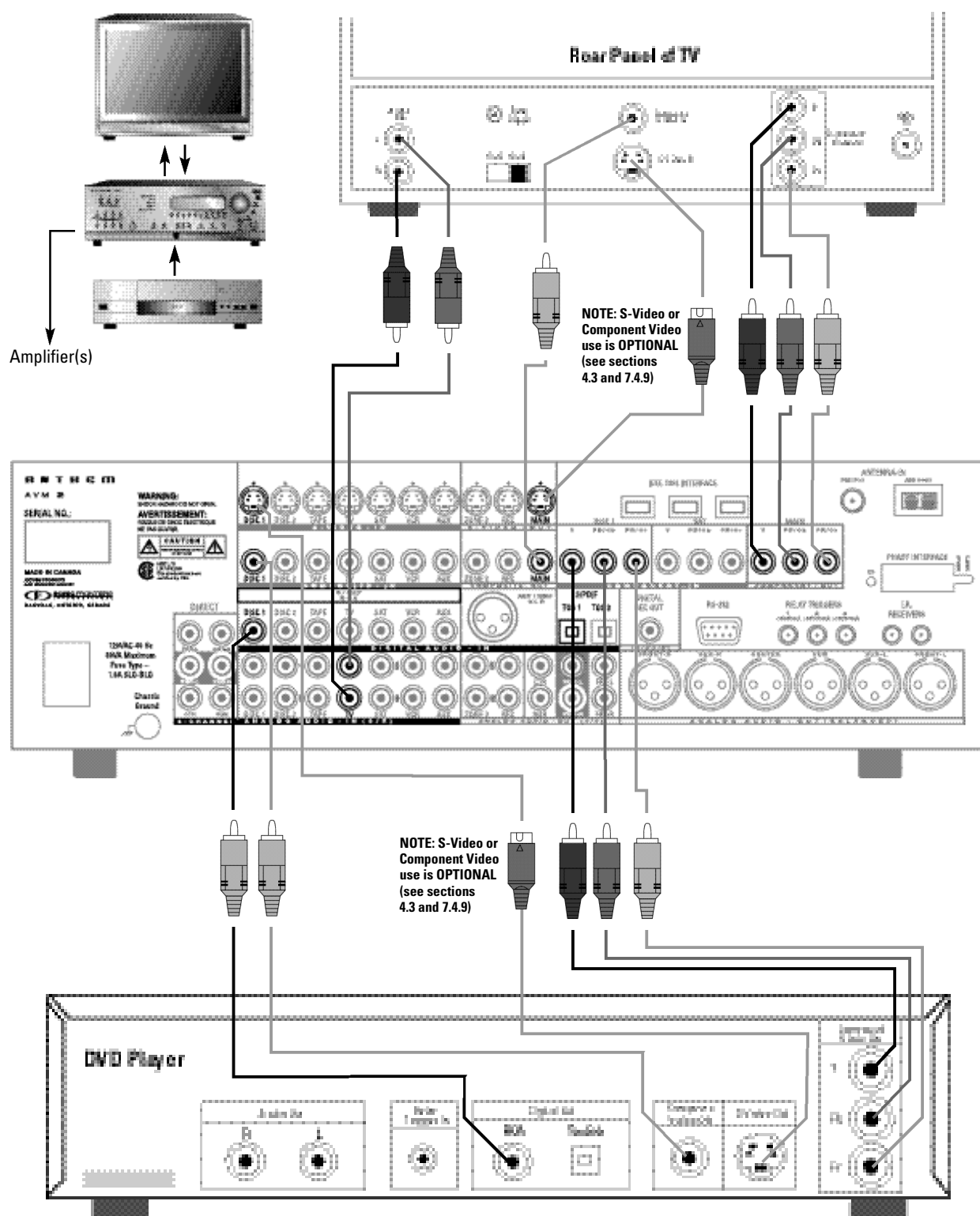


### 2.2.1-b CD Player to AVM 2 (Analog)



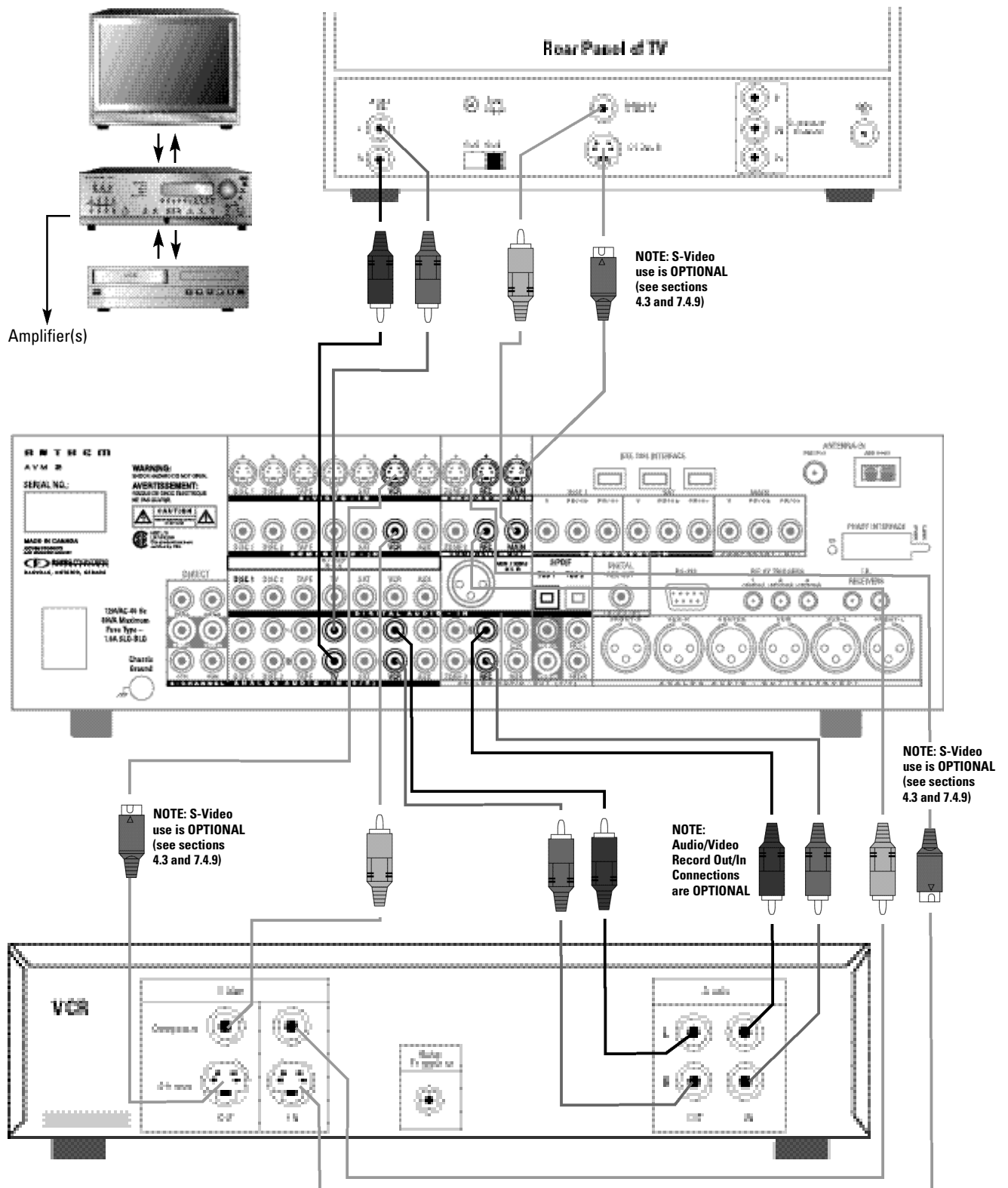
## 2. QUICK START continued ...

### 2.2.2 DVD Player and TV to AVM 2



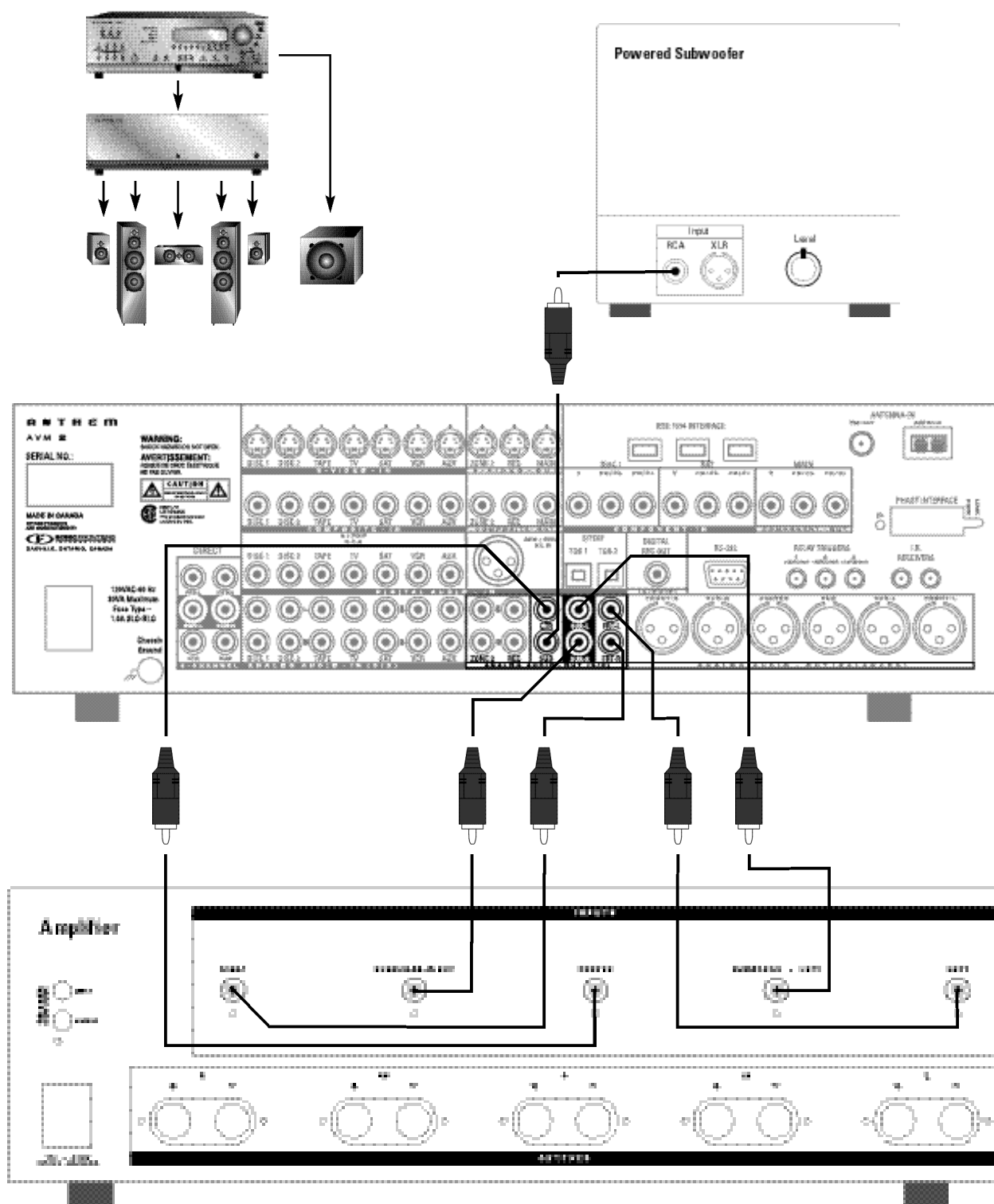
## 2. QUICK START continued...

### 2.2.3 VCR and TV to AVM 2



## 2. QUICK START continued ...

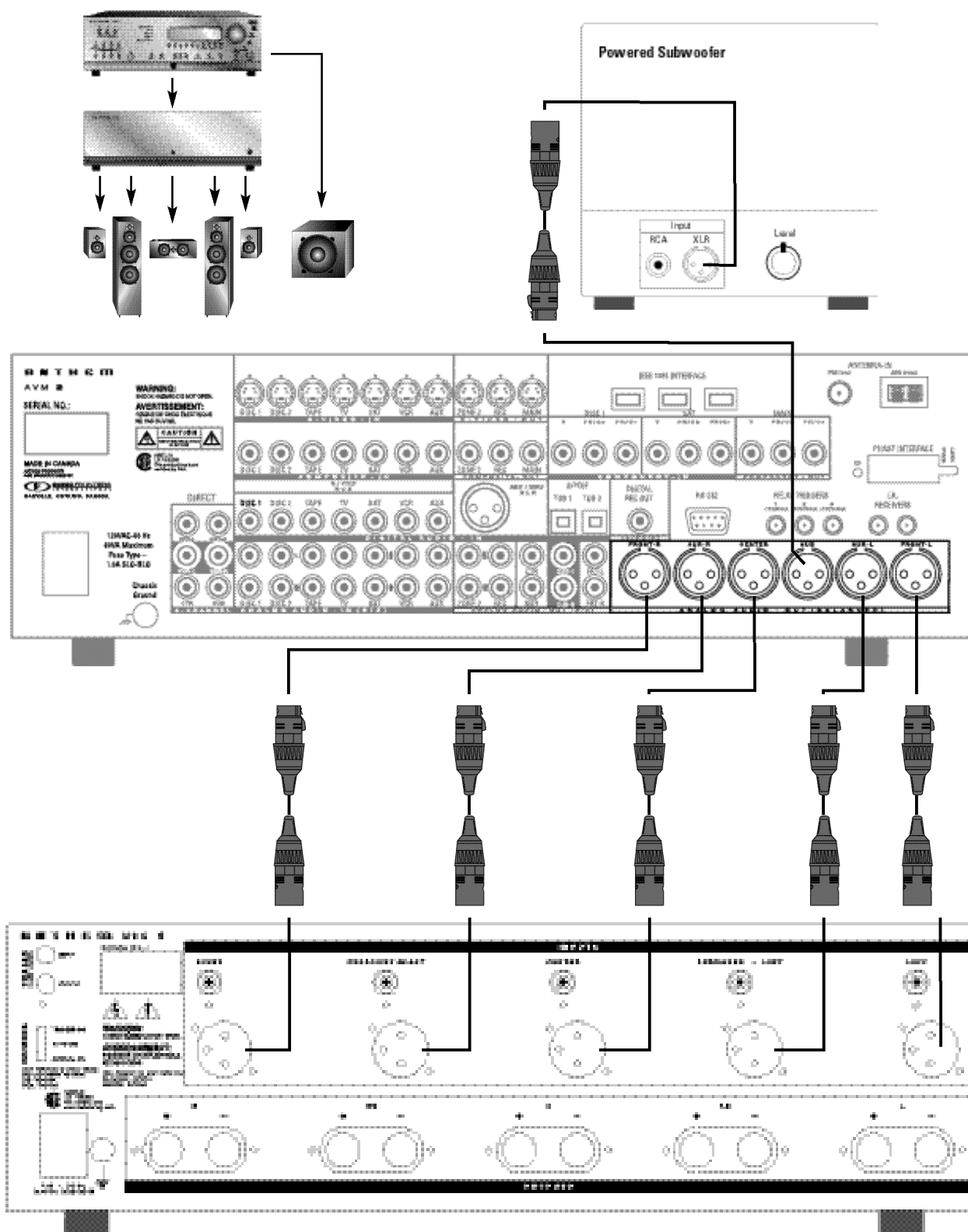
### 2.2.4-a AVM 2 to Amplifier and Powered Subwoofer (RCA)



Follow amplifier manufacturer's complete hook-up instructions to connect amplifier outputs to matching speakers.

## 2. QUICK START continued ...

#### 2.2.4-b AVM 2 to Amplifier and Powered Subwoofer (XLR)



**Follow amplifier manufacturer's complete hook-up instructions to connect amplifier outputs to matching speakers.**

## 2. QUICK START continued ...

### 2.3 SURROUND SYSTEM SPEAKER PLACEMENT

This illustration shows the typical speaker placement for a 6-channel surround system, also known as a 5.1 channel system, the '.1' channel being the LFE (Low Frequency Effect). The Front-Left, Center, and Front-Right speakers are directed toward the listener from the front while the Left and Right Surround speakers are positioned to the sides or behind the listener.



1. Front-Left Speaker
2. Front-Right Speaker
3. Center Channel Speaker
4. Surround-Left Speaker (Diffuse Type – drivers on both sides with 'null' facing the listening area.)
5. Surround-Right Speaker (Diffuse Type – drivers on both sides with 'null' facing the listening area.)
6. Subwoofer

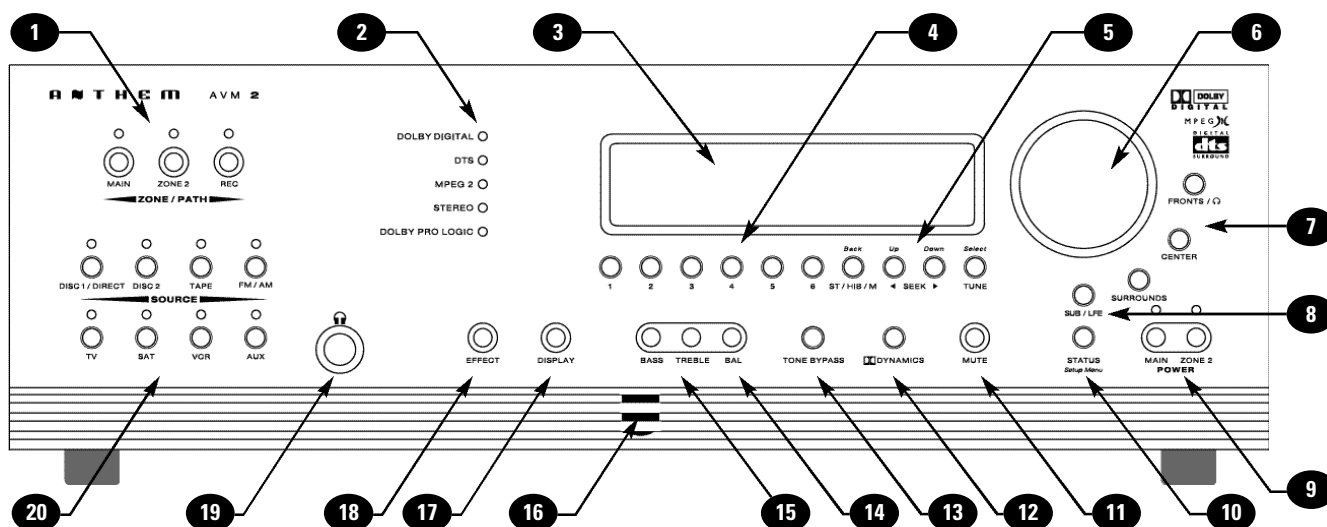
For optimal results, the size of the speakers and the distance of each speaker to the listening position should be entered in the Setup Menu of the AVM 2 (see sections 7.4.3, 7.4.4, and 7.4.5 )



## 3. PANELS / DISPLAY / REMOTE LAYOUT

### 3.1-a FRONT PANEL LAYOUT

The front panel of the AVM 2 has the MASTER CONTROL KNOB, selection buttons, an LCD display, status indicator LED's, and the Headphone jack .



- |  |  |
|--|--|
| 1 – Zone / Path Selection  | 10 – Status / Setup Menu (press and hold for 3 seconds)  |
| 2 – Mode / Surround Decoder Indicators   | 11 – Mute  |
| 3 – LCD Display  | 12 – Dolby Digital Dynamics Selection                    |
| 4 – FM/AM Station Preset Selection   | 13 – Tone Bypass   |
| 5 – FM/AM Tuning / Setup Menu Navigation   | 14 – Balance Selection for Adjustment                    |
| 6 – Master Control Knob (Volume, FM/AM Tune, Function Adjustment, Setup Menu Adjustment) | 15 – Bass / Treble Selection for Adjustment              |
| 7 – Speaker / Headphones Selection for Level / Bass / Treble / Balance Adjustments       | 16 – Front Panel Remote Control IR Sensor                |
| 8 – Subwoofer Level / LFE Level Selection for Adjustment                                 | 17 – Front Panel Brightness Selection                    |
| 9 – Power On / Stand-By Selection (MAIN / ZONE2)   | 18 – Dolby Pro-Logic / Effects / 96 kHz Stereo Selection |
|  | 19 – Headphone Jack                                      |
|  | 20 – Source Selection (Direct – press twice)             |

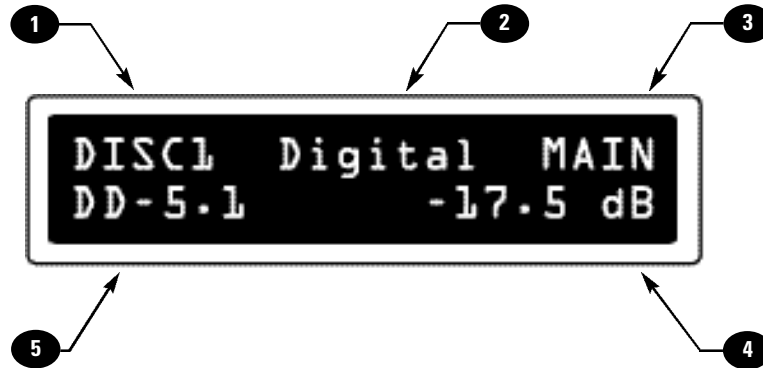
• See section 5 for complete information on Front Panel Operation.

## 3. PANELS / DISPLAY / REMOTE LAYOUT continued ...

### 3.1-b FRONT PANEL LCD DISPLAY

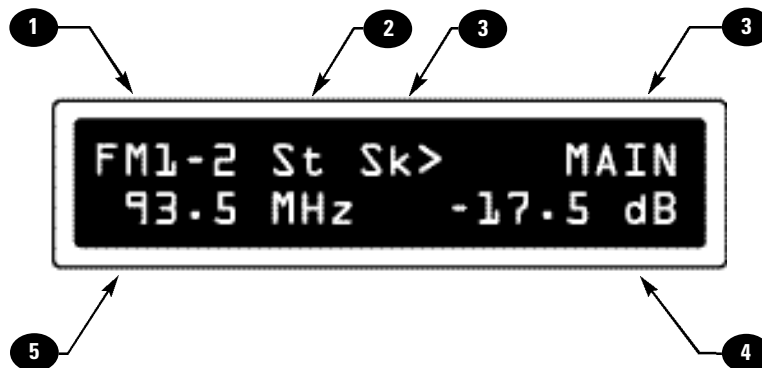
Here are two examples of the Front Panel LCD Display presentations:

#### MAIN Display



- 1 – Source Selection (see section 5.5).
- 2 – Audio-In Format (see section 7.4.2) or Sleep Indicator if engaged (see section 6.6).
- 3 – Zone / Path that the information on the display refers to (see sections 5.1, 5.3).
- 4 – Volume Setting. When MAIN or ZONE2 are muted, “Muted” flashes instead of the current volume setting (see section 5.8).
- 5 – Mode / Effects (if the source is FM/AM, then the tuned station appears).

#### FM/AM Display

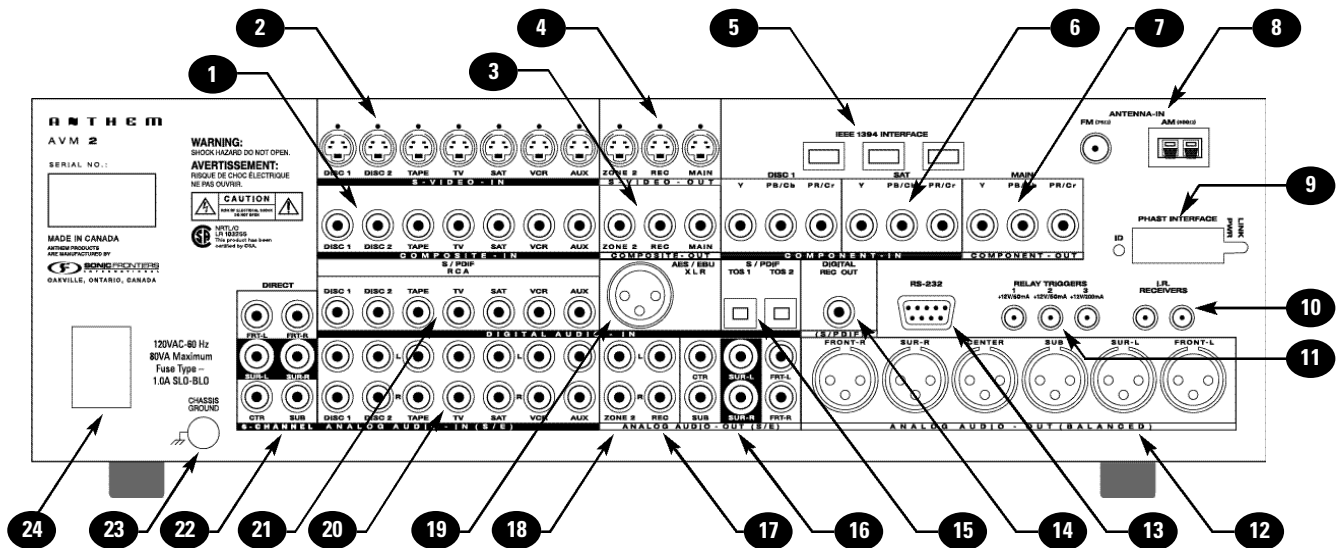


- 1 – Source+Band. The tuner has three FM bands (FM1, FM2, and FM3) and one AM band. The number after the selected band is the preset station (see section 5.5.4).
- 2 – Mode for FM. Displays “St” when in stereo, “HB” when Hi-Blend is selected, or “Mn” when in mono or mono is selected (see section 5.5.4).
- 3 – Seek when tuning FM/AM stations (see section 5.5.4).
- 4 – Zone / Path (see sections 5.1, 5.3).
- 5 – Volume Setting. When MAIN or ZONE2 are muted, “Muted” flashes instead of the current volume setting (see section 5.8).
- 6 – Currently tuned FM/AM frequency to the nearest 0.1 MHz for FM and to nearest 10 kHz for AM (see section 5.5.4).

### 3. PANELS/DISPLAY/REMOTE LAYOUT continued...

## 3.2 REAR PANEL LAYOUT

The Rear Panel of the AVM 2 contains all connections, such as the Audio and Video Inputs and Outputs, the FM/AM Antenna Inputs, AC Power connection and the RS-232 port which allows upgrading of the internal operating Software as well as control of the AVM 2 by external devices.



- |           |   |           |   |
|-----------|---|-----------|---|
| <b>1</b>  | – 7 Composite Video RCAInputs                     | <b>13</b> | – RS-232 Interface Port (Bi-Directional)            |
| <b>2</b>  | – 7 S-Video Inputs                                | <b>14</b> | – Digital Audio RCA S/PDIF Record Output            |
| <b>3</b>  | – 3 Composite Video RCA Outputs                   | <b>15</b> | – 2 Digital Audio Toslink Inputs (Assignable)       |
| <b>4</b>  | – 3 S-Video Outputs                               | <b>16</b> | – MAIN Analog Audio RCA Output (6 Jacks)            |
| <b>5</b>  | – 3 IEEE 1394 Interface Port provisions*          | <b>17</b> | – REC Analog Audio Stereo RCA Output (L/R Jacks)    |
| <b>6</b>  | – 2 Component Video RCAInputs (3 Jacks/ea)        | <b>18</b> | – ZONE2 Analog Audio Stereo RCA Output (L/R Jacks)  |
| <b>7</b>  | – Component Video RCA Output (3 Jacks)            | <b>19</b> | – Digital Audio AES / EBU Input (Assignable)        |
| <b>8</b>  | – FM and AM Antenna Inputs                        | <b>20</b> | – 7 Analog Audio Stereo RCA Inputs (L/R Jacks)      |
| <b>9</b>  | – PHASTLINK RJ45 Interface Port provision*        | <b>21</b> | – 7 Digital Audio RCA S/PDIF Inputs                 |
| <b>10</b> | – 2 Infra Red (IR) 3.5mmInputs                    | <b>22</b> | – Analog Audio 6-Channel Direct RCA Input (6 Jacks) |
| <b>11</b> | – 3 Relay Trigger 3.5mm Outputs (Assignable)      | <b>23</b> | – Ground Terminal                                   |
| <b>12</b> | – MAIN Analog Audio Balanced XLR Output (6 Jacks) | <b>24</b> | – Power Cord Connection                             |

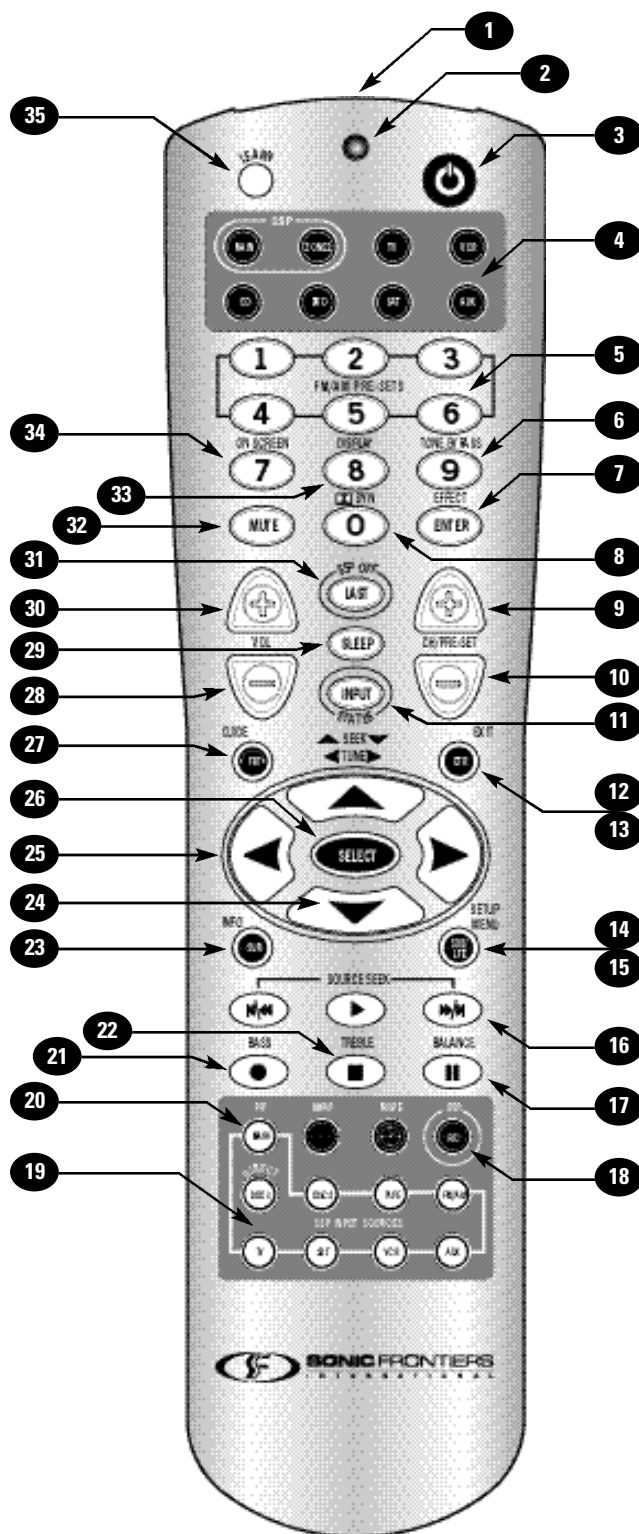
- See section 4 for complete information on Rear Panel Connections.

\* Interface card requires installation by a qualified dealer.

## 3. PANELS / DISPLAY / REMOTE LAYOUT continued ...

### 3.3 REMOTE CONTROL LAYOUT

- 1 – IR Transmitter (front face)
- 2 – Transmission Indicator LED (red)
- 3 – AVM 2 Power ON when MAIN or ZONE2 is selected  
Power ON/OFF for other components (see #4)  
**Note:** This does not turn the AVM 2 off (see #31)
- 4 – Zone/Path/Component 'Personality' Selection
- 5 – FM/AM Station Preset Selection (6)
- 6 – Tone Bypass Selection
- 7 – Dolby Pro-Logic / Effects / 96 kHz Stereo Selection
- 8 – Dolby Digital Dynamics Selection
- 9 – FM/AM Pre-set Station Up
- 10 – FM/AM Pre-set Station Down
- 11 – Status
- 12 – Center Channel Selection for Adjustment
- 13 – Back / Exit for Setup Menu
- 14 – Subwoofer Level / LFE Level Selection for Adjustment
- 15 – Setup Menu (Press & Hold for 3 seconds)
- 16 – Source Seek
- 17 – Balance Selection for Adjustment
- 18 – REC Path Selection (Must be in MAIN – see #4)
- 19 – Source Selection 8 Keys – 9 inputs (Direct – press twice)
- 20 – MAIN Source copy to ZONE2 or REC
- 21 – Bass Selection for Adjustment
- 22 – Treble Selection for Adjustment
- 23 – Surround Channels Selection for Adjustment
- 24 – ◆ FM/AM Seek / Setup Menu Navigation / Bass/Treble Adjustment
- 25 – ◆ FM/AM Tune / Setup Menu Navigation / Balance Adjustment
- 26 – Select Function in Setup Menu
- 27 – Front Channels / Headphones Selection for Adjustments
- 28 – Volume Down
- 29 – Sleep Timer Selection
- 30 – Volume Up
- 31 – AVM 2 Power OFF when MAIN or ZONE2 is selected
- 32 – Mute
- 33 – Front Panel / LCD Display Brightness Selection
- 34 – On-Screen
- 35 – Learn (for customization of remote)



• See section 6 for complete information on operation of the Remote Control.

## 4. CONNECTIONS

### 4.1 CONNECTING POWER TO THE AVM 2

Connect the power cord to the back of the AVM 2 and then to an AC outlet with a line voltage of between 105 and 130 Volts, 60 Hz.

When turned on, the AVM 2 will have all of the same settings it had when it was last turned off, except for Volume, which comes on at the pre-programmed setting (see section 7.4.6).

### 4.2 AUDIO CONNECTIONS

There are two methods of transmitting audio signals: Analog and Digital. Analog is an electrical waveform representation of sound and requires one cable for each channel. Digital represents sound using a sequence of numbers and requires only one cable for all channels. We recommend using digital connections wherever possible because they have lower background noise and provide better quality than analog connections when both formats are available. Connecting a DVD player or CD player to both the digital and analog connectors allows listening to an analog source in ZONE2 and REC, while listening to a digital source in MAIN.

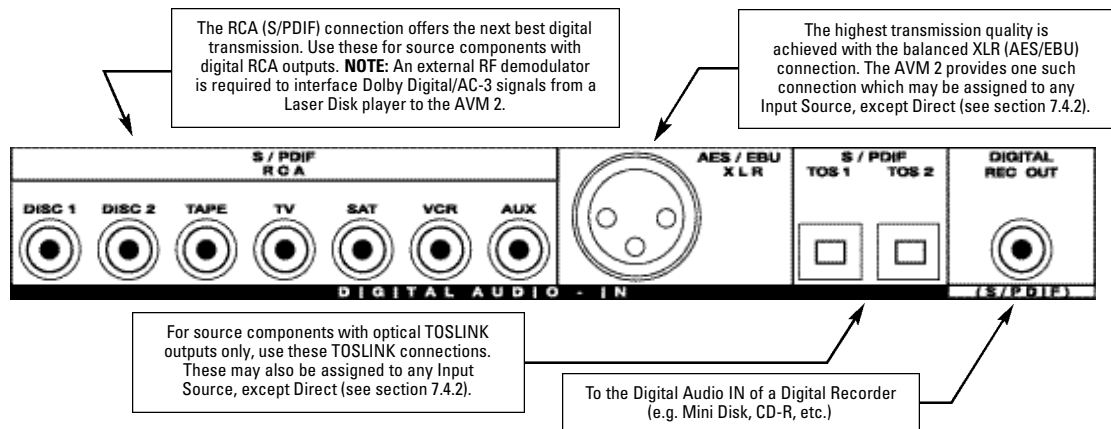
The AVM 2 accepts either analog or digital audio signals in all inputs except DIRECT, which accepts analog audio signals only. From the factory, DISC1, DISC2 and SAT inputs are set to Digital, whereas the TAPE, TV, VCR, and AUX inputs are set to Analog. Every audio input, except DIRECT, can be changed from the factory setting to either Digital or Analog (see section 7.4.2).

#### 4.2.1 DIGITAL AUDIO INPUTS / DIGITAL AUDIO OUTPUT

Digital Audio input connections are made through a 75-ohm coaxial (RCA), optical (TOS), or 110-ohm balanced (XLR) cable. DVD Players and CD Transports are generally connected using a coaxial cable with RCA connectors.

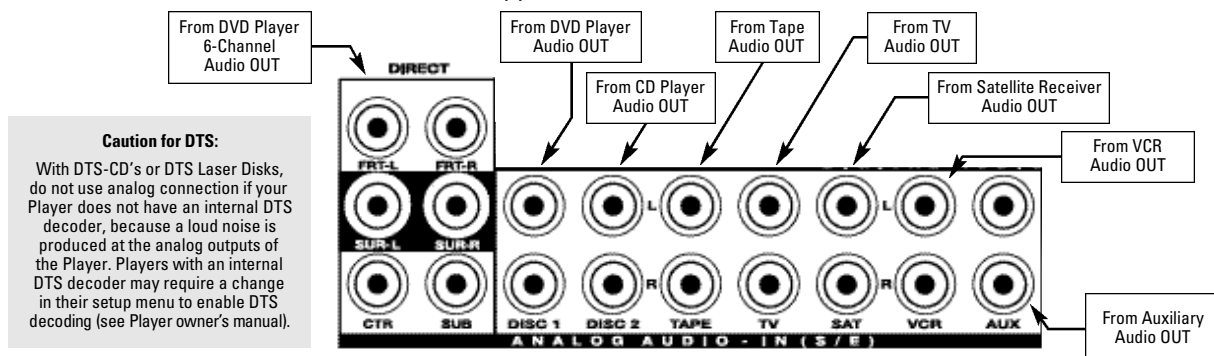
**Note:** The DIGITAL REC OUT (RCA-S/PDIF) only functions with Digital Audio Input Sources (e.g. DISC1, DISC2, or any other input source that you have set to 'digital', see section 7.4.2).

**Note:** This is also part of the independent REC Path (see Section 5.3).



#### 4.2.2 ANALOG AUDIO INPUTS

Analog audio connections are made with RCA interconnect cables. **Note:** REC and ZONE2 require analog audio connection unless set to 'copy' MAIN (see section 5.5.1).



## 4. CONNECTIONS continued ...

### 4.2.3 LEFT / RIGHT ANALOG AUDIO INPUTS

Analog audio signals pass through a pair of interconnect cables with RCA connectors – typically White or Black for the Left Channel and Red for the Right Channel. The audio output connectors from Tape Recorders, VCR's, and CD Players are normally colour coded in this same manner.

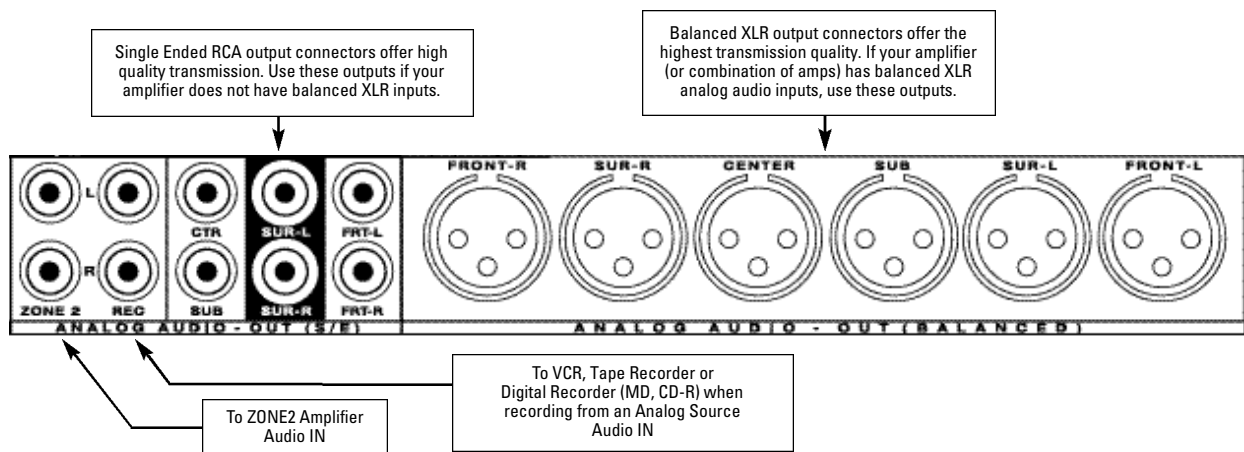
### 4.2.4 DIRECT / 6-CHANNEL ANALOG AUDIO INPUT

DVD Players with 6-channel Analog Audio outputs can connect to the DIRECT input. EFFECTS, BASS, TREBLE and DOLBY DIGITAL DYNAMICS are bypassed; only Volume, individual speaker level (Main, Fronts, Surrounds, Sub), Balance and Mute are controlled by the AVM 2.

- Alternatively the **DIRECT** input can be used as a 'purist' 2-channel Analog input for any 2-channel Analog source, such as a Phono Preamplifier, Tape Recorder, or the audio output from an external DAC, since the internal digital signal processing (DSP) stage is bypassed.
- To select the **DIRECT** Input, press **DISC1 / DIRECT** twice. Connect your source component's outputs to the FRT-L and FRT-R (RCA) input jacks for 2-channel operation, or use all of the input connections for 6-channel operation. Note: The DIRECT input is for MAIN only (see sections 5.1, 5.3, 5.5.3).

### 4.2.5 ANALOG AUDIO OUTPUTS

The AVM 2 Single Ended (RCA) and Balanced (XLR) outputs operate concurrently providing the same audio output signal and level. This allows the use of multiple amplifiers with different types of inputs. For example, the FRT-R and FRT-L Balanced (XLR) outputs could connect to the Balanced (XLR) inputs of a 2-channel amplifier while the CTR, SUR-L, and SUR-R Single Ended (RCA) outputs could connect to the Single Ended (RCA) inputs of a 3-channel amplifier.



## 4.3 VIDEO CONNECTIONS

The AVM 2 provides video inputs and switching for three formats: Composite Video, S-Video and Component Video. The component video bandwidth supports HDTV, line doublers, and line quadruplers.

Note that video format conversion is not performed – if S-Video is used from your VCR, whenever the VCR Source is selected, only the S-Video output on the AVM 2 will have a signal to send to your TV Monitor. **Always remember to select the matching video input on your TV Monitor/Projector.**

The choice of video format depends on the type that is available on your TV Monitor / Projector. If it only accepts Composite Video, then there is no point in connecting the S-Video or Component Video from your DVD Player, VCR, or Satellite Receiver to the AVM 2. The Composite Video connection must be used throughout the system, in this case. (The same applies if you use S-Video or Component, of course.)

## 4. CONNECTIONS continued ...

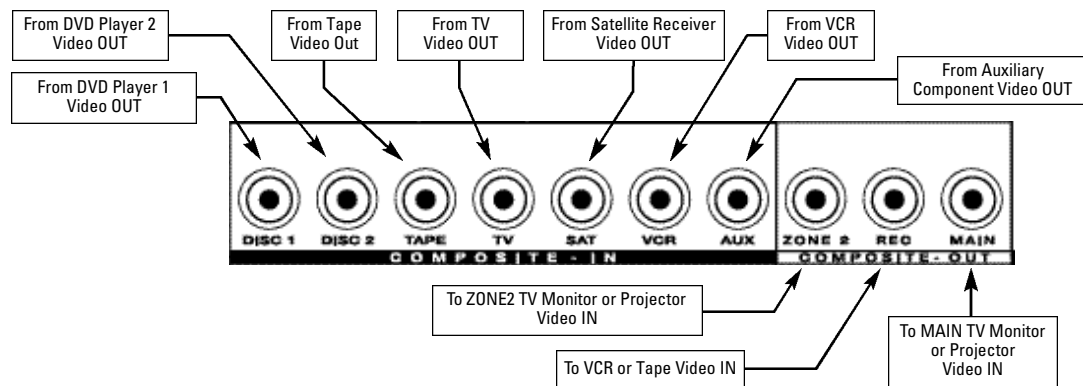
The On-screen Display and Setup Menu are only displayed in MAIN (Zone / Path) and available when Composite Video or S-Video connections are used. Composite Video is the factory default setting (see section 7.4.9 menu 9.b). The AVM 2 does not provide an On-Screen Display or On-Screen Setup Menu Display for the Component Video output.

**If you are using Component Video,** do the following to access the On-Screen Setup Menu Display:

- Complete all Component Video connections (see section 4.3.3).
- Connect the AVM 2 Composite or S-Video output to your TV Monitor's Composite or S-Video input.
- Temporarily change your TV Monitor to the Composite or S-Video input whenever you wish to access the Setup Menu (section 7).

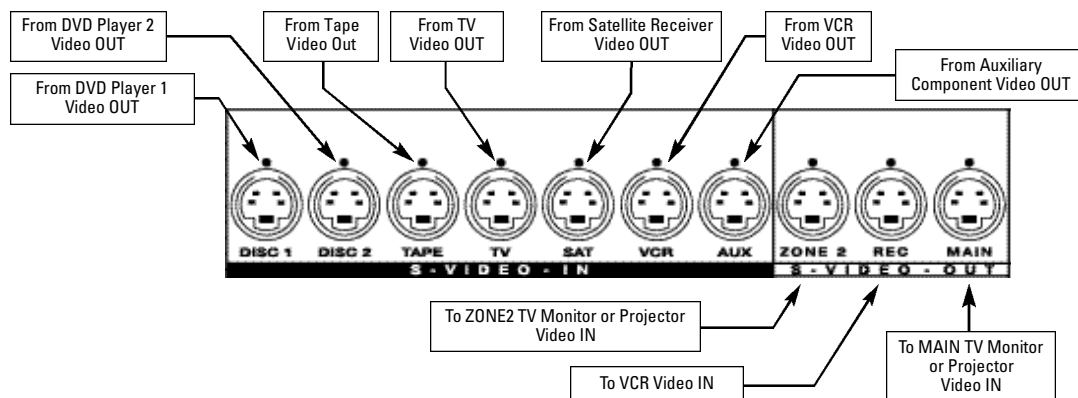
### 4.3.1 COMPOSITE VIDEO

This is the oldest and most commonly used video format. It combines the black/white and colour information for transmission on a single coaxial cable with RCA connectors. These signals must then be separated again within the TV Monitor, resulting in some degradation of video quality.



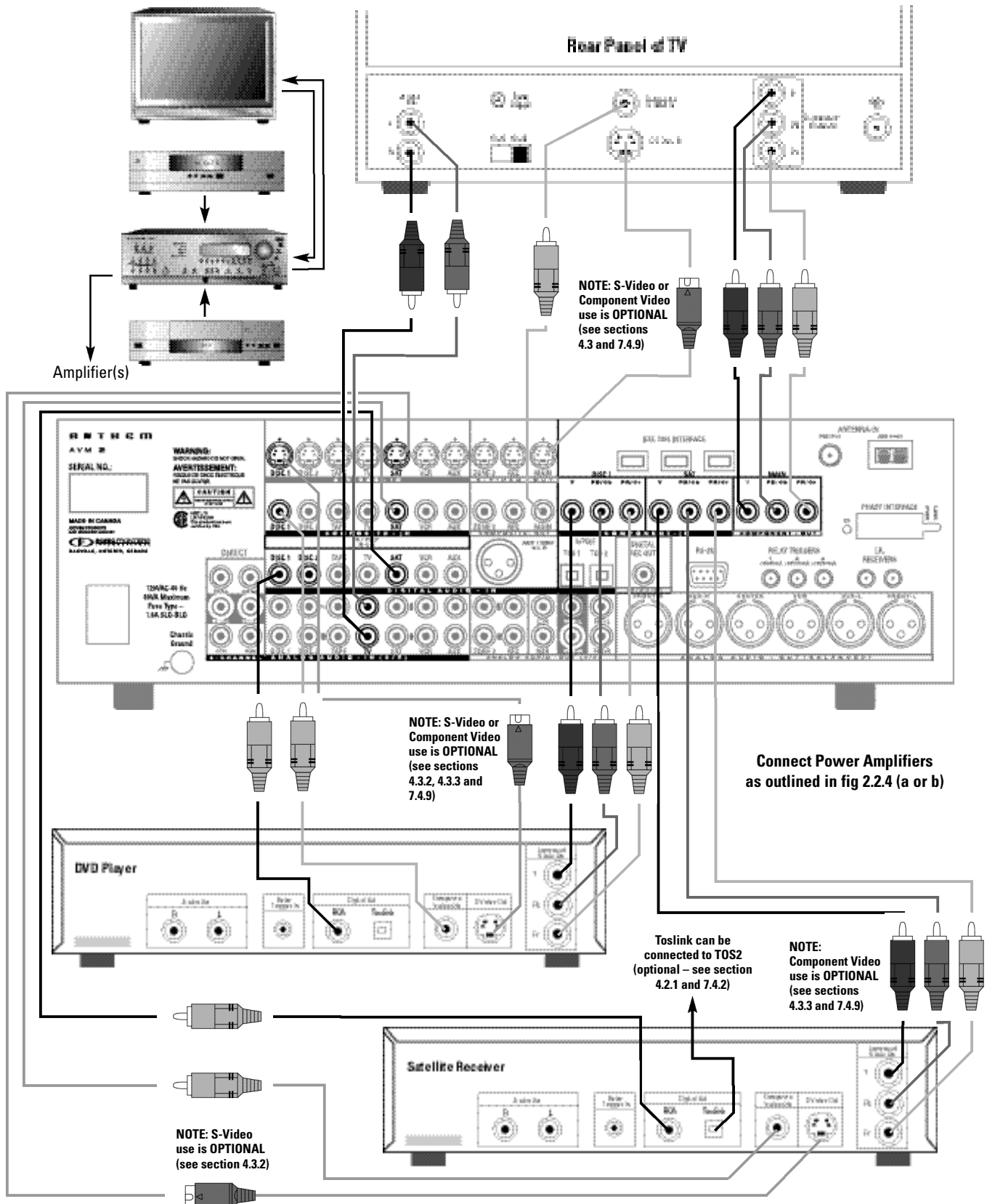
### 4.3.2 S-VIDEO

The S-Video signal is split into two parts (chrominance and luminance) and transmitted over a multi-conductor cable with S-Video connectors (5-pin Mini DIN), resulting in better video quality.



# 4. CONNECTIONS continued ...

## DVD Player, Satellite Receiver, and TV Connections with AVM 2 as Video Input Selector

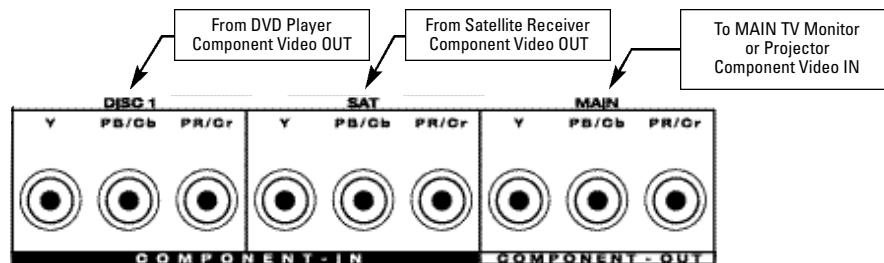




## 4. CONNECTIONS continued ...

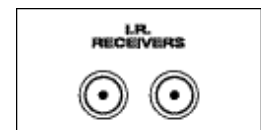
### 4.3.3 COMPONENT VIDEO

The Component Video signal is split into three parts and transmitted over three coaxial cables with RCA connectors. This format produces the highest video quality. Only some TV Monitors, Projectors, DVD Players, and most HDTV Decoders utilize Component Video. The AVM 2 has two preassigned Component Video inputs, one for DISC1 and one for SAT. Note that all 3-wire connections must be made (Y, PR/Cr, PB/Cb). Component-In and Component-Out are compatible with HDTV and all other 3-wire component video formats.



### 4.4 I.R. (INFRA RED) RECEIVERS

External IR repeaters allow the Remote Control to be used from other locations in your home. Once a repeater is wired to a selected room, it can be connected to one of the AVM 2's I.R. RECEIVER inputs with 3.5mm mono mini plugs via a 'data box'. This eliminates the need for what is commonly known as a 'flasher' for the AVM 2. 'Flashers' may still be required for other components not equipped with IR Receiver Inputs.

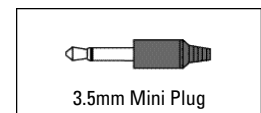
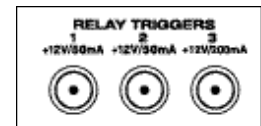


### 4.5 RELAY TRIGGERS

If your other components have provisions for a triggered power-on, you can automatically turn them on with a push of a button on the AVM 2 Front Panel or Remote Control. Connect a trigger output from the AVM 2 to the trigger input of your power amplifier, TV Monitor, etc., using a cable with 3.5mm mono mini plugs.

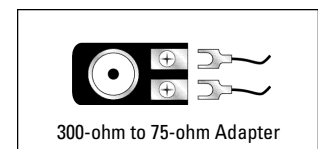
**Note:** Trigger3 is designed to provide the extra current (up to 200 mA) required by relays in larger projectors and motorized screens. Depending on the equipment, a larger gauge of wire may be required (consult your dealer for assistance).

The AVM 2 provides flexible trigger options. From the factory, all the triggers are disabled. Through the Setup Menu, the conditions for enabling triggers can be specified (see section 7.4.8).

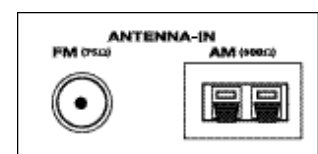


### 4.6 FM/AM ANTENNAS

To connect the FM antenna, first connect the two antenna wires to the screw terminals of the 300-ohm to 75-ohm adapter. Then connect the adapter to the FM ANTENNA-IN on the AVM 2. If your local cable company provides FM service, connect the cable directly to this input instead of using the adapter.



To connect the AM loop antenna, press the spring-loaded tabs of the AM ANTENNA-IN connector, insert the bare ends of the wire from the loop antenna and release the tabs.



Once both antennas are connected, move each of them around until best reception is found. For the FM antenna, this will usually be in a "T" formation.

## 5. FRONT PANEL OPERATION OF THE AVM 2

This section will familiarize you with operating the AVM 2 from the **Front Panel** keypad buttons. Section 6 outlines how to operate the AVM 2 from the Remote Control.

### 5.1 ZONE / PATH

The AVM 2 is best understood as a product that contains two components (or ‘personalities’) in one chassis.

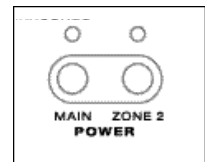
- It is first of all a state-of-the-art Music and Home Theater Preamp/Surround Sound Processor (SSP) and Tuner designed to provide exceptional high-end performance (**MAIN**) with a completely independent record path selector (**REC**).
- It is also a high-end Whole House Entertainment Control Center that allows you to direct and adjust the output of a variety of source components to other rooms in your home (**ZONE2**).

ZONE / PATH best describes how this tremendous flexibility of the AVM 2 is arranged. Simply think of ZONE / PATH as a the method of controlling each of the AVM 2's operating personalities, in any combination you wish – both its “**Music & Home Theater SSP**” personality, or its “**Control Center for Other Room(s)**” personality.

### 5.2 POWER ON/OFF

When turned on, the AVM 2 will have all of the same settings it had when it was last turned off, except for Volume – which comes on at the pre-programmed value (see section 7.4.6).

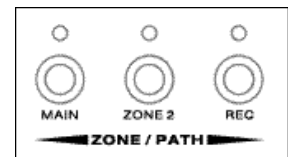
- **MAIN ON:** There are various of ways of switching MAIN ON:
  - Press **MAIN** in the POWER group (fig. right).
  - Press **MAIN** in the ZONE / PATH group (fig. below).
  - If ZONE2 is OFF, press **any SOURCE**, FM/AM preset (**1** through **6**), or **TUNE** to immediately power-up MAIN.
- **MAIN OFF:** Press **MAIN** in the POWER group.
- **ZONE2 ON:** Press **ZONE2** in the POWER group or in the ZONE / PATH group.
- **ZONE2 OFF:** Press **ZONE2** in the POWER group.
- **REC ON:** Press **REC** in the ZONE / PATH group. MAIN will turn on simultaneously. The Front Panel Display will show REC Path information and, without any further changes, it will revert to MAIN after a few seconds (see highlighted notation in section 5.3).
- **REC OFF:** Press **MAIN** in the POWER group. This turns off MAIN and REC simultaneously.



### 5.3 PATH SELECTION

The Path facility routes **SOURCES** to the **MAIN** Path, **ZONE2** Path or **RECORD** Path.

- **MAIN Path:** As the name suggests, the MAIN Path routes the Audio / Video Sources connected to the AVM 2 to your Main listening/viewing room. The MAIN Path has Video outputs for your MAIN TV Monitor and 6-channel (5.1) Analog Audio outputs to drive MAIN amplifiers.
- **ZONE2 Path:** Allows you to simultaneously route any Audio / Video Source to other listening/viewing rooms in your home. The chosen source in the ZONE2 Path can be either the same or different from the source selected in the MAIN Path. The ZONE2 Path has Video outputs for a ZONE2 TV Monitor and 2-channel Analog Audio outputs to drive ZONE2 Amplifier(s). You can only listen to Analog Inputs or a ‘copy’ of the MAIN digital or analog source (see section 5.5.1).
- **REC Path:** Allows you to simultaneously record Audio / Video sources independently of what is selected in the other paths. For example, while watching a DVD in the MAIN Path, you could play a CD in ZONE2, and record an FM program in the REC Path. Alternatively, if recording is of no concern, the REC Path output can be connected to a Receiver and Speakers to create a third listening zone. REC will also route a selected digital source to the digital REC OUT, however the digital REC OUT will not provide any output if the REC selected source is analog. As with ZONE2, REC only operates with an analog input or by ‘copying’ MAIN (see section 5.5.1).



**Note:** The REC Path output level is fixed. If it is being used as REC-Zone3, an Integrated Amp or similar device is required to control the volume. (REC Path controls both Digital and Analog REC OUTS).

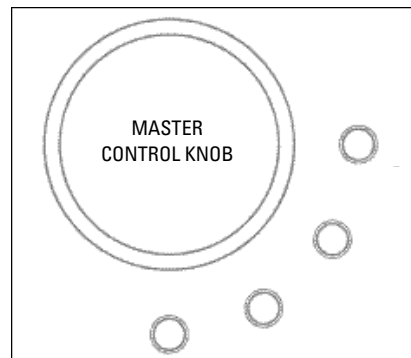
## 5. FRONT PANEL OPERATION continued ...

The AVM 2 automatically returns to MAIN a few seconds after an adjustment is made in either ZONE2, REC, or HEADPHONE\*. This is designed to prevent accidents. Say, for example someone enters the MAIN room and turns up the volume – if the AVM 2 stayed in ZONE2, then the ZONE2 volume would increase, not the MAIN Volume. Since the person adjusting the volume doesn't hear any change, chances are they would just keep turning it up and wonder what's wrong, until something potentially 'bad' happens in ZONE2. If you've seen "The Party" and remember the hilarious scene where Peter Sellers messes with the console, you probably understand. The time-out value can be changed in the Setup Menu (see section 7.4.9 menu 9.c).

\*Except when MAIN is off or HEADPHONE is set to 'Mute' the MAIN speakers (see section 7.4.3 menu 3.h)

### 5.4 MASTER CONTROL KNOB

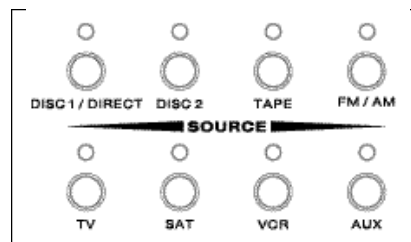
Although it looks like a mere volume control, the MASTER CONTROL KNOB is actually much more. It operates many functions of the AVM 2, including Level / Bass / Treble and Balance Adjustments, FM/AM Tuning, Effects Selection and Setup Menu Adjustments. From this point in the Manual, the MASTER CONTROL KNOB will be referred to extensively.



### 5.5 SOURCE SELECTION

The AVM 2 can accommodate up to eight external sources plus the built-in AM/FM Stereo Tuner.

The sources as listed on the front panel are: DISC1 / DIRECT, DISC2, TAPE, FM/AM, TV, SAT, VCR, and AUX. You can also rename these sources, which will then change the name on the AVM 2's LCD and On-Screen Displays (see section 7.4.1).



#### 5.5.1 COPYING THE MAIN SOURCE TO ZONE2 or REC

This unique copy feature allows the output from the MAIN Source (e.g. DVD, CD, etc.) to also be directed to ZONE2 and REC for both Analog and Digital Sources. For example, with only a Digital audio input connected to the AVM 2, a CD Player could be playing in MAIN and the same audio output would be provided to ZONE2. This way, you can listen to the same music in ZONE2 as you are playing in MAIN, or record the same music in REC that you are playing in MAIN, all using the AVM 2's internal high-end DAC for each copied Path.

Whenever you have selected a MAIN Source (Analog or Digital), that Source can be copied as follows:

- **ZONE2:** Press and hold **ZONE2**, and then press **MAIN**. (This will also work in reverse.)
- **REC:** Press and hold **REC**, and then press **MAIN**. (This too will work in reverse.)

When MAIN is copied, the display reads "**-MAIN-> ZONE2**" or "**-MAIN-> REC**" after the selected source, along with the information normally displayed for ZONE2 or REC (see highlight at the beginning of section 7.4.2).

**Note:** Other adjustments made to MAIN such as Bass, Treble, and Channel Balance are not copied.

#### 5.5.2 DOWN-MIXING DOLBY DIGITAL 5.1 TO 2-CHANNEL STEREO

The Center and Surround Channels can be mixed into the Left and Right Channels for the ZONE2 and REC outputs. This can either be done by the DVD Player itself or by the AVM 2:

- **DVD Player Down-mix:** If the Left/Right (L/R) analog outputs from your DVD Player are connected to an AVM 2 Source's Analog Inputs, but the Audio-In Format for that source is set to Digital (i.e. DISC1 – see section 7.4.2), the AVM 2 will route this L/R analog audio signal to ZONE2 whenever the ZONE2 Path and that Source are selected (this also applies to REC). The Center and Surround

## 5. FRONT PANEL OPERATION continued ...

Channels are downmixed to L/R 2-channel stereo by the DVD Player.

**Note:** If you are doing this, the digital output from your DVD Player must still remain connected to the AVM 2, otherwise MAIN will not receive the digital signal to provide 6-channel (5.1) output.

- **AVM 2 Down-mix:** If you are not using the Left/Right (L/R) analog outputs from your DVD Player (or if they are not available), the AVM 2 will do the 2-channel down-mix whenever you copy MAIN Source to the ZONE2 Path or REC Path (see section 5.5.1). The Center and Surround Channels are downmixed to L/R 2-channel stereo by the AVM 2.

### 5.5.3 DIRECT INPUT

DISC1 has an additional input for 6-channel DIRECT Analog Audio. When the DIRECT input is used all digital signal processing stages such as Bass, Treble, Effects and Dolby Digital Dynamics are bypassed. Only the Volume, individual speaker level (Main, Fronts, Surrounds, Sub), Balance and Mute can still be controlled.

For the most part, the DIRECT input is intended for DVD Audio Players. If unused for 6-channel audio, the Front-Left and Front-Right inputs can be used as a 'purist' 2-channel Analog input for MAIN.

To access the DIRECT Analog Audio input, press **DISC1 / DIRECT** twice. The video signal from DISC1 will still be routed to the MAIN Composite, S-Video, and Component outputs. The DIRECT input cannot be selected for ZONE2, REC, or HEADPHONE outputs.

### 5.5.4 FM/AM TUNER

The AVM 2 has a built-in FM/AM tuner, which is common to all Paths. The station that is selected in either MAIN, ZONE2, or REC is automatically shared with all other Paths.



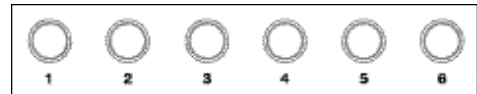
#### Finding a Station

The band is selected by pressing **FM/AM**. To manually tune a radio station, press **TUNE** and rotate the Master Control Knob. To automatically seek the next station, press **◀ SEEK** or **SEEK ▶**.

To scan and listen to all available radio stations for a few seconds, press and hold **◀ SEEK** or **SEEK ▶** for about a second. The '◀ Sk' or 'Sk ▶' indicator on the display will change to '◀ Prv' or 'Nxt ▶'. To stop scanning, press one of the **◀ SEEK ▶** buttons to return to Seek mode, or press **TUNE** to return to manual tuning mode. Press **TUNE** a second time to restore the regular functions and display (the TUNE function does not time out).

#### Presets

18 FM and 6 AM stations can be stored in the AVM 2. The presets are divided into four banks of six. These are accessed by repeatedly pressing **FM/AM**. The display will show that you are cycling through 'FM1', 'FM2', 'FM3', 'AM'. When you are in a bank you can store the currently tuned radio station to a preset by simply pressing and holding one of the six preset keys (1 through 6) for about a second. You can even do this while scanning for stations. The lower line of the LCD display briefly flashes once the station is stored. To recall a preset, select the bank and then press the respective preset key.



#### ST / HiB / M

If FM reception is weak, switching a station out of the stereo mode can reduce or eliminate unwanted hiss and noise. Press **ST / HiB / M** to change the mode from Stereo (St) to Hi-Blend (HB) or Mono (Mn). Hi-Blend offers an alternative to Mono, offering decreased noise without the complete loss of stereo – it decreases hiss and noise by reducing some stereo separation only at higher frequencies. Press repeatedly to cycle through 'St', 'HB', 'Mn'.



## 5. FRONT PANEL OPERATION continued ...

### 5.6 VOLUME CONTROL

In **MAIN** the AVM 2 can control the volume of all speakers simultaneously, and the level of individual speakers or pairs of speakers. ZONE2 and HEADPHONE volumes are also controlled separately.

**Note:** Always make certain you are in the Zone / Path that you want to adjust before making any Volume or Level changes. The LCD display shows the current setting – MAIN, ZONE2, or HPHONE. To change press MAIN or ZONE2 (Zone / Path), or FRONTS twice (must be in MAIN).

**Note:** To adjust the Level / Bass / Treble / Balance of individual speakers or speaker groups, first select the speaker(s) to adjust, and then rotate the Master Control Knob.

To change MAIN Volume or Level, check to see that the LCD display reads MAIN, then adjust as follows:

- **All Speakers Simultaneously:** This is the default position, simply adjust.
- **Fronts Only:** Press FRONTS, then adjust. This changes Left, Center, and Right speakers simultaneously.
- **Center Only:** Press CENTER, then adjust.
- **Surrounds Only:** Press SURROUNDS, then adjust.
- **Subwoofer Only:** Press SUB, then adjust. **Pressing SUB twice** allows you to reduce the level of the **LFE** (Low Frequency Effect) output from a DVD, DTS-CD, or DTS Laser Disk while leaving the bass derived from the other channels at their original levels. Some of these discs exhibit prodigious levels of bass, and may need the use of this feature.
- The AVM 2 automatically memorizes the individual **SUB** level settings for each of six different modes – Dolby Digital, Dolby Pro Logic, DTS, MPEG, Stereo, and DIRECT. This unique feature lets you adjust the SUB level of a CD (Stereo), to one setting, then play a DVD movie and adjust the SUB level to a different setting. Play the CD again and the SUB level returns to the previous CD (Stereo) setting. This eliminates the need to constantly adjust subwoofer level for music vs. movies. It also allows adjustment for subwoofer level differences in various surround sound modes.

**Note:** When listening in Stereo (CD, FM/AM, etc.) with Front Speakers set to 'Large', the Subwoofer must be set to 'Super' for it to receive bass information and function (see section 7.4.3 menu 3.d).

To change ZONE2 Volume:

- **ZONE2:** Press ZONE2 (Zone / Path), then adjust. Since ZONE2 has L/R stereo outputs only, the Fronts, Center, Surrounds, and Sub buttons do not function.

To change HEADPHONE Volume:

- **HEADPHONE:** Check that the LCD display reads MAIN, press FRONTS twice, then adjust. If you prefer, MAIN can be set to mute when headphones are used (see section 7.3.3 menu 3.h).

### 5.7 BALANCE CONTROL

This allows you to make the L/R speakers louder or quieter than each other.

To change the Balance of:

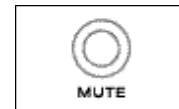
- **MAIN – Fronts and Surrounds Simultaneously:** Press BAL, then adjust.
- **MAIN – Fronts L/R Only:** Press FRONTS, press BAL then adjust.
- **MAIN – Surrounds Only:** Press SURROUNDS, press BAL then adjust.
- **ZONE2:** Press ZONE2 (Zone / Path), press BAL, then adjust. Since ZONE2 has L/R stereo outputs only, Fronts, Center, Surrounds, and Sub do not function.
- **HEADPHONE:** Press FRONTS twice, press BAL, then adjust.



## 5. FRONT PANEL OPERATION continued ...

### 5.8 MUTE

When MUTE is pressed, the audio output to the Zone / Path shown on the LCD display is silenced. The volume shown is replaced by "Muted". Press MUTE again, or rotate the Master Control Knob to adjust the volume, and sound will return.



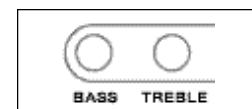
**Note:** MAIN, ZONE2 and HEADPHONE can all be muted independently.

To MUTE or UNMUTE:

- **MAIN:** Press MUTE.
- **ZONE2:** Press ZONE2 (Zone / Path), press MUTE.
- **HEADPHONE:** Press FRONTS twice, press MUTE.

### 5.9 BASS / TREBLE CONTROLS

MAIN, Fronts+Center, Surrounds, ZONE2, and HEADPHONE all have independent Bass and Treble adjustments. (**Note:** DIRECT bypasses Bass/Treble Controls.)



To change the BASS and/or TREBLE of:

- **MAIN – All Speakers Simultaneously:** Press BASS or TREBLE, then adjust.
- **MAIN – Fronts+Center:** Press FRONTS or CENTER, press BASS or TREBLE, then adjust.
- **MAIN – Surrounds:** Press SURROUNDS, press BASS or TREBLE, then adjust.
- **ZONE2:** Press ZONE2 (Zone / Path), press BASS or TREBLE, then adjust.
- **HEADPHONE:** Press FRONTS twice, press BASS or TREBLE, then adjust.

#### 5.9.1 TONE BYPASS

TONE BYPASS temporarily disables BASS and TREBLE. To enable them again, press either BASS or TREBLE.



TONE BYPASS operates in MAIN, ZONE2 and HEADPHONE. Be certain you are in the Zone / Path that you want to affect before pressing the TONEBYPASS button. The LCD display shows the current setting – MAIN, ZONE2, or HPHONE. To change press MAIN, ZONE2 (Zone / Path), or FRONTS twice (must be in MAIN).

### 5.10 EFFECTS

The Dolby Pro Logic decoder in the AVM 2 takes analog or digital encoded 2-channel source material and decodes it into Dolby Pro Logic surround sound. Other 2-channel stereo source material can use the AVM 2's simulated effects that also use all speakers to create a variety of surround sound acoustic environments.



Each Source keeps its own setting – what you select stays with that source only. You can therefore set the VCR to 'Dolby Pro Logic' while the FM/AM Tuner can be set to 'Hall' and CD set to 'Club'.

**Note: DVD Digital 5.1 Source Material:** The AVM 2 automatically decodes and outputs 5.1 surround sound (Dolby Digital, DTS, MPEG). **Effects are not available.**

**DVD Digital Dolby Pro Logic Source Material:** The AVM 2 automatically decodes and outputs Dolby Pro Logic surround sound. **Effects are not available.**

**VCR Analog Dolby Pro Logic Source Material:** With analog, there is no 'flag' to tell the AVM 2 that this is Dolby Pro Logic encoded material. Dolby Pro Logic must therefore be 'turned-on' manually by selecting it in the Effects options. **Other Surround Effects are available.**

## 5. FRONT PANEL OPERATION continued ...

To select an Effect, press **EFFECT** and rotate the **Master Control Knob**:


<b>None (Off):</b>	Disables all Effects. Disables Dolby Pro Logic decoding for all analog source material, even if it is Dolby Pro Logic encoded.
<b>Dolby Pro Logic:</b>	Enables Dolby Pro Logic decoding for all source material, whether it is encoded or not. This mode should always be used on Dolby Pro Logic encoded VCR tapes. Since Dolby Pro Logic is the most popular encoding format for VCR movies, we recommend leaving the VCR Source in this setting.
<b>Hall:</b>	Simulates a medium-large concert hall by adding a longer reverberation time. The performers are heard from a greater distance. Ideal for classical orchestral music and light orchestral music, such as that found on many film soundtrack albums. Generally sounds a bit muddy on rock or pop.
<b>Theater:</b>	Simulates what you would hear in the front rows of a medium size theater with relatively unobtrusive reverb. Suitable for opera, rock, easy listening, and any music you might hear in a theater.
<b>Stadium:</b>	A prominent slap echo, coming largely from the surrounds gives a lively effect, especially on solo instruments. This is unsuitable for speech as the echo destroys intelligibility, but perfect for rock.
<b>Club:</b>	Simulates a small intimate club setting with a moderate amount of reverb that does not destroy clarity. Can be used for jazz, cabaret, disco to simulate a small venue, classical chamber music, and solo instrumental music.
<b>Church:</b>	Gives the sense of a large, spacious area with a very long reverberation time. Suited to organ music, choral music and New Age. Not meant to be used with most other material.
<b>5 Channel Stereo:</b>	Left and Right output is also sent to the Surround Left and Right channels. The Center channel and Subwoofer receive a combination of both. Useful for playing music at parties so that it can be heard equally in all parts of the room.
<b>5 Channel Mono:</b>	Combines the Left and Right channels and sends the same signal to all speakers. Similar to 5 Channel Stereo, except that the Front and Surround channels no longer have separate Left and Right information.
<b>96 kHz Stereo:</b>	The AVM 2 is fully capable of receiving 24-bit audio with a 96 kHz sampling rate. The purpose of this setting is to allow the bass and treble controls, and the subwoofer crossover, to operate accurately when sources with 24-bit/96 kHz digital outputs are in use.

Two such sources are DVD Audio, and upsampled CD. DVD Audio, a new format, has higher resolution and improved sound over conventional CD. An upsampler is a device used with a regular CD transport that converts the normal 44.1 kHz sampling rate to 96 kHz, and the word length from 16-bit to 24-bit, to improve the sound of standard CD's.

**Note:** When in 96 kHz Stereo, other Effects are not available.

## 5. FRONT PANEL OPERATION continued ...

### 5.11 DOLBY DIGITAL DYNAMICS

This feature only applies to certain Dolby Digital DVD's. It allows you to control the difference between the softest and loudest passages. Please note that some Dolby Digital DVD titles do not provide dynamic scaling, and selecting one of the following three settings will have no effect. You can cycle through the settings by repeatedly pressing  **DYNAMICS**:



- Normal:** This setting reproduces the full dynamic range of the recording.
- Reduced:** This setting allows the quieter parts to be heard more easily so that the overall volume can be reduced. It works by raising the level of quieter sounds and/or reducing the level of louder sounds, depending on the DVD producer's choice.
- Late Night:** Reduces the softest-to-loudest difference even further. The quietest passages can be heard even more easily, allowing the overall volume to be even further reduced. Therefore, all of the program can be easily heard without having to hear sudden loud passages.

### 5.12 LCD DISPLAY

The intensity of the LCD display and LED indicators can be changed. Repeatedly pressing **DISPLAY** changes the setting to High, Medium, Low, or Off.



**Note:** When DISPLAY is set to Off, the LCD backlight goes off but the display characters are still visible to allow you to see current operating information.

**Note:** To make the display and LED indicators less obtrusive, at all settings except High the LCD display and LED indicators may automatically dim a few seconds after the AVM 2 is left at rest. They may both immediately 'wake-up' again when any operation is performed.

The High, Medium, and Low intensities and the Front Panel Wake-up can be modified, as can the time-to-rest when the display will dim (see section 7.4.9).

### 5.13 STATUS / Setup Menu

This button has two functions: It displays information regarding current Software, settings, and modes of operation. It also lets you access the Setup Menu.



**Press and Release:** Automatically steps through each display screen showing the following status information:

- **Day, time, and Software version.**
- **Input Format:** Which channels are receiving information from the selected source.
- **Listen Format:** Which channels are producing output (depends on Input Format and Effect settings).
- **Surround Effect:** Which Effect is selected.
- **Dolby Digital Dynamics:** Normal, Reduced, Late Night or Not Available (NA)
- **MAIN Tone:** Enabled or Bypassed.
- **MAIN Sleep Mode:** Enabled or Disabled.
- **MAIN Timer Mode:** Enabled or Disabled.

When in ZONE2, pressing **STATUS** displays information related to ZONE2 only.

**Press and Hold** for a few seconds to enter the **Setup Menu**. Pressing **Back** (ST/HiB/M) lets you escape. Please read section 7 before exploring the Setup Menu.

**WARNING:** If you do explore the Setup Menu, do not enter passwords without reading section 7 first.



## 6. REMOTE CONTROL OPERATION

Dr. Jekyll and Mr. Hyde, as you may know, were two very different personalities, even though they were the same person. Well, the AVM 2 Remote Control is the host to **NINE** different personalities! (All of them 'good', of course.)

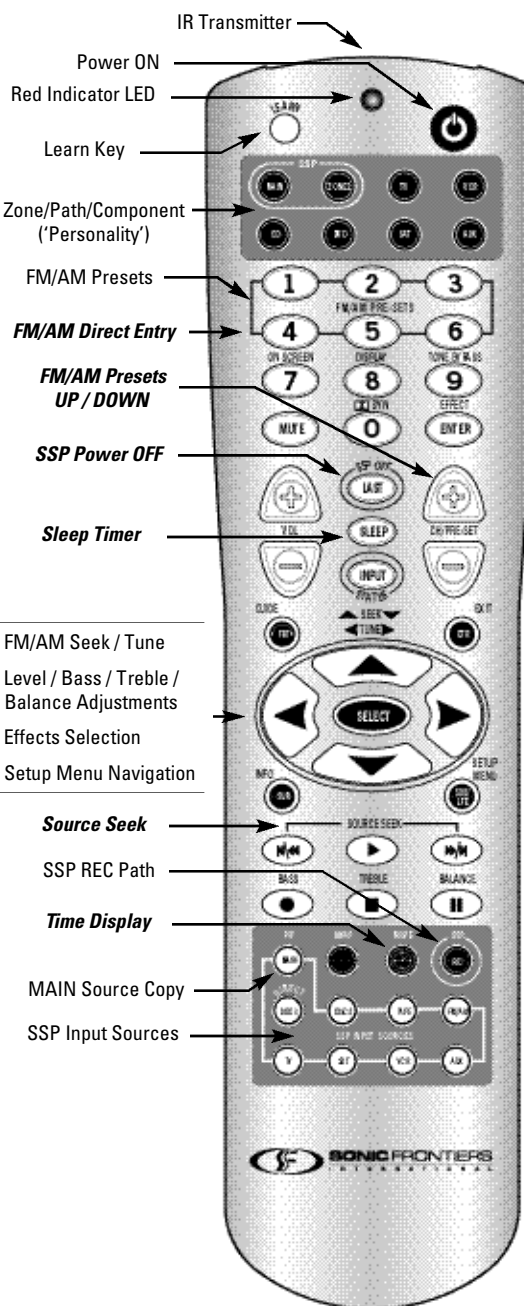
The AVM 2 Universal Learning Remote Control has all of the same functions as the front panel keys and is operated in a similar way, but there are some differences. Please take the time to read this section to fully understand all that the AVM 2 Remote Control can do.

The keys labeled in this illustration show those that have a **different** method of operation from their front panel counterparts. Those shown in ***bold italics*** indicate keys that are unique to the Remote Control and not found on the Front Panel. For a detailed layout diagram see section 3.3.

Before we get started, we have to give the remote a little attitude adjustment – set the 'personality' to MAIN. Press **MAIN** in Zone/Path/Component near the top of the remote.

**Note:** The Zone/Path/Component keys do not transmit any commands to the AVM 2, or anywhere else. They only determine where subsequent commands are sent. For example, if **ZONE2** is selected followed by **VOL+**, then the volume changes in **ZONE2** while **MAIN** and all other components remain unaffected.

Did we forget to mention the batteries? They go in by taking off the rear cover – remember polarity. Down the road, if the keys don't light up when they're pressed, and the red LED blinks twice, it's an indication that the batteries need replacement.



### 6.1 POWERING THE AVM 2 ON AND OFF

Because separate power commands are a requirement in custom multi-zone and home theater installations, **two different keys** are used to turn the AVM 2 ON and OFF.




The **Power ON** key in the top right corner turns the AVM 2 Power ON. The red **SSP OFF** key in towards the middle turns the AVM 2 Power OFF.

The AVM 2 can be turned ON and OFF as follows:

- **MAIN ON** – Press **MAIN** in Zone/Path/Component, then press **Power ON**.
- **MAIN OFF** – Press **MAIN** in Zone/Path/Component, then press **SSP OFF**.
- **ZONE2 ON** – Press **ZONE2** in Zone/Path/Component, then press **Power ON**.
- **ZONE2 OFF** – Press **ZONE2** in Zone/Path/Component, then press **SSP OFF**.

## 6. REMOTE CONTROL OPERATION continued ...

### 6.2 PATH SELECTION

- **MAIN** – Press **MAIN** in Zone/Path/Component, then press .
- **ZONE2** – Press **ZONE2** in Zone/Path/Component, then press .
- **REC** – Press **MAIN** in Zone/Path/Component, press , then press **SSP REC**.

**Short Cut:** After pressing MAIN or ZONE2 in Zone/Path/Component 'personality', pressing any other active key in that selected Path will automatically switch the AVM 2 to that Path.

#### 6.2.1 COPYING THE MAIN SOURCE TO ZONE2 OR REC

Select a MAIN Source first and then for:

- **ZONE2** – Press **ZONE2** in Zone/Path/Component, then press **MAIN** Source in SSP Input Sources near the bottom.
- **REC** – Press **MAIN** in Zone/Path/Component, press **SSP REC** near the bottom, then press **MAIN** Source in the SSP Input Sources near the bottom.

**Note:** The **SSP REC** key only works when Zone/Path/Component is in **MAIN**.

**Note:** While all Analog Sources are simultaneously available to MAIN, ZONE2 and REC, this unique copy function is the only way to direct a MAIN **Digital** Source to ZONE2 or REC.

### 6.3 SOURCE SELECTION

After selecting the desired Path (MAIN, ZONE2, MAIN+REC), press one of eight SOURCE keys in the SSP Input Source group near the bottom. To access DIRECT, press DISC1 twice.


#### 6.3.1 SOURCE SEEK (Remote Control Only)

The SOURCE SEEK keys are an easy way to find the active sources. The ◀ ▶ keys go to the previous and next active source while the ► key advances one source at a time.

### 6.4 DIRECT FM/AM STATION ENTRY (Remote Control Only)

When using the FM/AM Tuner, the station frequency can be entered as a four-digit number using the digit keys. For example, to tune into 98.3 FM, press **SELECT, 0, 9, 8, 3**.

### 6.5 TIME DISPLAY (Remote Control Only)

To display the time press . The AVM 2 will return to its normal display after a few seconds.

### 6.6 SLEEP TIMER (Remote Control Only)

If you would like to go sleep while listening to program, the **Sleep Timer** will automatically turn the AVM 2 power off after a preselected time. So when you find yourself falling asleep at the 'tube', take the Remote Control and:

- Select the desired Zone/Path (MAIN or ZONE2), then press the **SLEEP** key (which will operate for that Zone/Path only).

## 6. REMOTE CONTROL OPERATION continued ...

- The first **SLEEP** keystroke always resets the timer to 30 minutes. Additional keystrokes then cycle as follows: first=30, second=60, third=90, fourth=Disabled.
- Once set, the time remaining appears as the number following '**Zzz**' in the display.

### 6.7 CONTROLLING OTHER COMPONENTS

The AVM 2 Remote Control can be set up to control your TV, DVD Player, CD Player, VCR, Satellite Receiver, and a second TV. It contains a very extensive set of Remote Control codes from many different manufacturers, which can be entered to virtually duplicate another Remote Control. Alternatively, the learning function can be used to customize each key.

#### 6.7.1 ENTERING MANUFACTURER'S CODES


In Appendix A at the back of this manual you will find the manufacturer's codes available for programming the AVM 2 remote. For new models, get the latest list of codes at [www.sonicfrontiers.com](http://www.sonicfrontiers.com). To enter a code:

1. Press the Zone/Path/Component key (e.g. **DVD**).
2. Press and hold **LEARN** until the LED flashes twice.
3. Enter the **four-digit code** from Appendix A. The LED should blink twice.

Codes can **only** be used with their respective Zone/Path/Component key. That is to say, a VCR code can not be programmed in the DVD Zone/Path/Component key.

#### 6.7.2 SEARCHING FOR A CODE

If a code for your component is not listed in Appendix A:

1. Turn the component on (e.g. TV).
2. Press the matching Zone/Path/Component key (e.g. **TV**).
3. Press and hold **LEARN** until the LED flashes twice.
4. Press **9, 9, 1**.
5. Aim the remote towards the TV, and alternate between pressing  and **TV**.
6. Stop once the TV turns off. Immediately press and release **LEARN** to lock the code.
7. If, for future reference, you want to know what the code is, press and hold **LEARN** until the LED flashes twice and then press **9, 9, 0, 1**. Wait 3 seconds and count the number of flashes. The number of flashes represent the first digit (i.e. 3 flashes = 3, no flash = 0). Next, press **2** for the second digit, **3** for the third digit, and **4** for the fourth digit, and count the number of flashes each time. Record this code number for future reference in Appendix A.

#### 6.7.3 VOLUME LOCK

After entering a code for your TV or Satellite Receiver, you may find it inconvenient to switch the Zone/Path/Component buttons back and forth when you alternate between say, changing channels on your TV and adjusting the volume of MAIN (AVM 2). Not to worry, the Volume Lock feature takes care of this. When engaged, the volume keys adjust MAIN volume, regardless of which Zone/Path/Component is selected. You can then leave your Zone/Path/Component selection in TV – you no longer have to press MAIN first to adjust the volume of the AVM 2.

In the following example, MAIN volume is locked onto every Zone/Path/Component selection except ZONE2.

## 6. REMOTE CONTROL OPERATION continued ...

### To Engage Volume Lock for MAIN:

1. Press and hold **LEARN** until the LED flashes twice.
2. Press **9, 9, 3**.
3. Press **MAIN**.

At this point, the Volume and Mute buttons now control MAIN, no matter which of the eight Zone/Path/Component selections the Remote Control is in. However, since this may not be desirable, any individual Zone/Path/Component selection can be unlocked.

### To Disengage Volume Lock for ZONE2, and re-engage the ZONE2 Volume Control:

4. Press **ZONE2**.
5. Press and hold **LEARN** until the LED flashes twice.
6. Press **9, 9, 3**.
7. Press **VOL-**.

The Volume and Mute keys now control MAIN for every Zone/Path/Component selection except for ZONE2. You may continue to unlock other Zone/Path/Components one at a time. To unlock all Zone/Path/Components at once and restore the default setting, press **VOL+** instead of **VOL-** in step 7.

### 6.7.4 LEARNING FUNCTION

The AVM 2 Remote Control has the ability to learn the command of an individual key from almost any other remote control. When a new command is programmed onto a key, the original command is still available by pressing LEARN before pressing the key. We'll call this the Layer-1 method.

If the original command of a particular key is used more than the learned command, it might be better to program the learned command in Layer-2. This means that when a taught key is pressed, the original command functions as always, and the learned command is accessed by pressing LEARN before pressing the key. In essence, this is the reverse of the Layer-1 method.

The learned commands are retained in the Zone/Path/Component selection into which they were programmed. For instance, if the ◀ ▶ ▲ ▼ navigation keys are programmed into the DVD selection, they won't perform the learned command if another Zone/Path/Component is selected.

### Limitations on Learning

Before getting to the learning procedure, please read these limitations so that success can be optimized:

- Some codes are not learnable. This includes multi-frequency codes, some high frequency codes, and other unusual formats.
- All keys, with the exception of the Zone/Path/Component keys and LEARN, can be taught.
- Typically, the memory allows up to 24 keys to be taught.
- The Remote can learn only one code per key. It can not be taught a sequence of several keystrokes on one key.
- In general, we recommend that you do not teach the Record key. The Record key, almost always, requires a double key press (Rec+Pause or Rec+Play). The double key press will be lost when the Record key is involved in most learning operations. This lack of consistency does not always allow for proper function and is best avoided.
- During a learning event, the Source Remote and the AVM 2 Remote should be 1 to 2 inches apart, and the IR transmitters of the two Remotes should be aligned with each other.

## 6. REMOTE CONTROL OPERATION continued ...

- The placement of the IR transmitter in the Source Remote may make it difficult to correctly align the two Remotes.
- Source Remotes that contain a beam-focusing lens may require more than one attempt at successful alignment.
- The learning process should be conducted in an area where there is a low level of IR emission. High levels of natural light or fluorescent lighting could interfere with a learning event.
- The maximum carrier frequency is 135 kHz.

### Teaching a Key

To initiate the learning operation, follow these steps:

1. Point the Source Remote and AVM 2 Remote at each other (to be ready for step 5).
2. Press and hold **LEARN** until the LED flashes twice.

One long blink indicates low battery or faulty memory. The Remote will not go into learn mode if either of these conditions exist.

3. Press **9, 7, 5**, then the desired **Zone/Path/Component key**.

To place the command in Layer-1, follow step 4a. To place the command in Layer-2, follow step 4b:

- 4a. Press the **key to be taught**. Proceed to step 5.
  - 4b. Press **LEARN** (don't hold), then press the **key to be taught**.
5. The LED flashes rapidly. Within 4 seconds, press and hold the **teaching key on the Source Remote** until the LED flashes twice. The LED will go out while it receives a signal from the Source Remote.

One long blink appearing during this step indicates a learning failure, which could mean:

- Bad Capture (try again).
- Memory Full (delete another command).
- Unlearnable Code.

6. Repeat steps 4a or 4b and 5 as often as desired (up to the maximum limit of memory or 24 keys).
7. Wait 10 seconds to exit the learning mode automatically.

### Deleting a Learned Command from a Key

To delete a learned command on one key, you can either overwrite it with a new code on the same key, or use the following delete sequence:

1. Press and hold **LEARN** until the LED flashes twice.
2. Press **9, 7, 6**, the **Zone/Path/Component key**, the **key to be deleted**, the **key to be deleted again**.

To erase all learned commands in all Zone/Path/Component keys, press and hold **LEARN** until the LED flashes twice and then press **9, 8, 0**.

### 6.8 TEACHING THE AVM 2 REMOTE CONTROL TO TOUCHPAD REMOTES

Some keys on the AVM 2 Remote, such as **VOL+**, **VOL-**, and **Setup Menu** (SUB/LFE), have **press and hold** commands as well as regular **press and release** commands. The 'press and hold' command of a key is exactly the same as the 'press and release' command of that key, repeated as long as the key is held. You must program your aftermarket Touchpad to **loop** or **repeat** a 'press and release' command to turn it into a 'press and hold' command. The methods of doing this vary with the model – contact the touchpad manufacturer for more information.

## 7. ADVANCED SET-UP

The **SETUP MENU** enables you to access the basic and advanced settings for the AVM 2. In other words, this is where all the user definable operating characteristics / calibrations / customized configurations are entered.

You can only gain access to the Setup Menu with the ZONE / PATH set to **MAIN**.

For optimum performance and enjoyment, it is crucial that your AVM 2 be properly set up.

For ease of viewing, use of the On-Screen display is strongly recommended whether accessing the Setup Menu from the Remote Control or Front Panel. Both the On-Screen and Front Panel displays are synchronized.

Please note that parts of the Setup Menu contain more lines than the On-Screen display can show on one screen – use Remote Control **▼ ▲** keys (Front Panel **'Down' / 'Up'**) to scroll through them.

Illustrations throughout this section show the On-Screen display menus. The Front Panel LCD display of the AVM 2 has similar information fields.

The factory default is set to Composite Video because it is the most commonly available video input. To use S-Video for your On-Screen display instead, temporarily connect the AVM 2 to your TV Monitor's Composite Video input, or use the AVM 2 Front Panel display to enter the Setup Menu. Navigate to DISPLAYS/SELECTION TIME. It allows you to change the On-Screen Output (see section 7.4.9).

**Note:** Component Video connections to your TV Monitor do not provide an On-Screen display. You must then have an additional Composite or S-Video connection to your TV Monitor (and switch your TV Monitor inputs) or use the Front Panel display to configure the Setup Menu of the AVM 2.

On the Front Panel refer to the italicized labeling above or below the keys. **Note:** The On-Screen menu line that is highlighted in red on your TV screen is the one that is currently active.

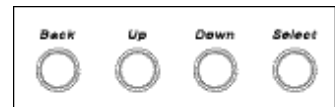
### 7.1 HOW TO ENTER THE SETUP MENU from:

- **Remote Control:** Press and hold the **Setup Menu** (SUB/LFE) key for 3 seconds.
- **Front Panel:** Press and hold the **STATUS/Setup Menu** button for 3 seconds.



### 7.2 HOW TO NAVIGATE AND MAKE CHANGES TO SETUP MENU ITEMS from:

- **Remote Control:** Use the **▲ ▼** keys to scroll through menus.  
Press **SELECT** to choose a menu item.  
Use the **▲ ▼** and **◀ ▶** keys to change the settings within the menu item.  
Press **EXIT** to return to previous item or menu.
- **Front Panel:** Press **'Up'** and **'Down'** to scroll through menus.  
Press **'Select'** to choose a menu item.  
Rotate the **MASTER CONTROL KNOB** to change the settings within the menu item.  
Press **'Back'** to return to previous item or menu.



### 7.3 HOW TO EXIT THE SETUP MENU from:

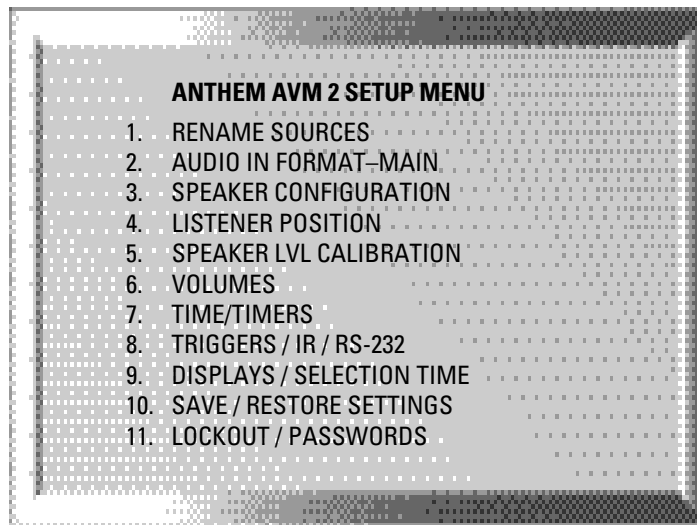
- **Remote Control:** Press **EXIT** repeatedly to get to 'Setup Menu', then press **EXIT** once more to exit.
- **Front Panel:** Press **'Back'** repeatedly to get to 'Setup Menu', then press **'Back'** once more to exit.

## 7. ADVANCED SET-UP continued ...

**Note:** The last change made to a Setup Menu item will always be the “entered” result. If you make a change to a Setup Menu item and then decide you don’t want it to change after all, you must go back to that Setup Menu item and adjust it back to the original setting.

### 7.4 ANTHEM AVM-2 SETUP MENU

With your TV Monitor connected as described at the beginning of this section, enter the Setup Menu as described in section 7.1. Your On-Screen display will show the following information:



**Note:** Due to the On-Screen character size, your monitor will not show more than 8 sub-menu entries at one time. To view any remaining sub-menu entries, simply scroll ▼ (*Down*) to show any remaining menu items. In this section, the manual will always show all available sub-menu items for each section.

Follow the navigation instructions as outlined in section 7.2 to locate and make changes to Menu items.

**For Example:** Let’s say you want to set the actual distance from speaker(s) to the listening position (section 7.4.4). Here is what you would do: (**Note:** Front Panel keystrokes are indicated in brackets.)

- Enter the Setup Menu (section 7.1).
- Press the ▼ (*Down*) key until you reach “4. LISTENER POSITION”.
- Press **SELECT** (*Select*). This will bring up the “4. LISTENER POSITION” Submenu.
- Use the ▼ ▲ (*Down* / *Up*) keys to scroll to the speaker(s) that you want to change.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change the distance.
- Press the **EXIT** (*Back*) key to leave the submenu and return to the Setup Menu.

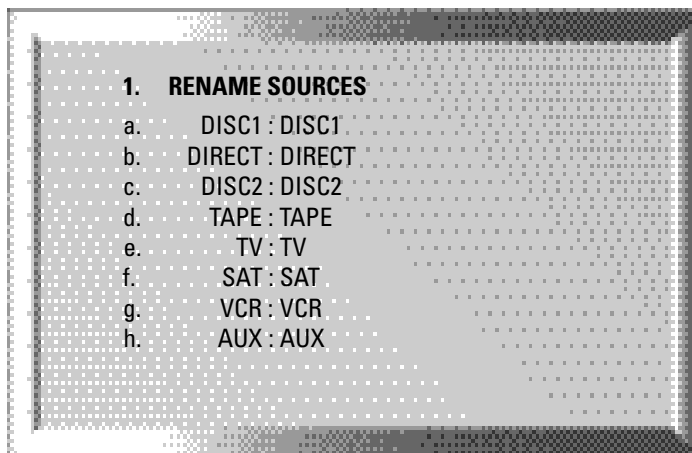
## 7. ADVANCED SET-UP continued ...

### 7.4.1 RENAME SOURCES

The Rename Sources Setup Menu lets you change the factory assigned name that is displayed when selecting a Source. Those that are renamed will then appear that way throughout all Setup Menus and display screens during normal operation.

**Source names can be up to six characters long. You have the following characters available:**

- A, B, C...Z, a, b, c...z, <blank>, 0, 1, 2...9.

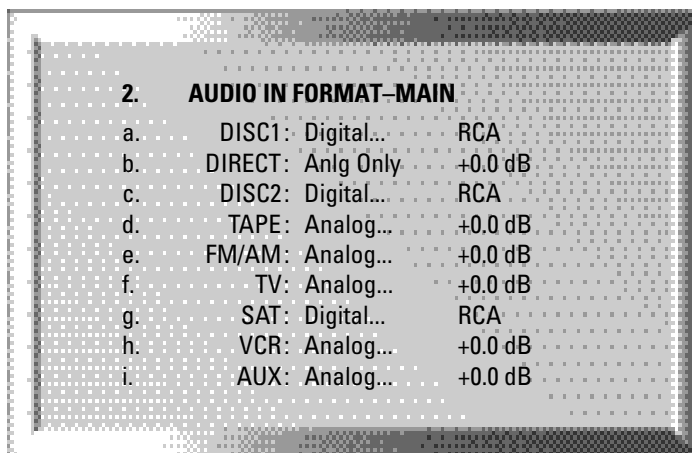


**RENAME SOURCES Example:** Rename DISC2 to 'CD'.

- Enter the Setup Menu (section 7.1). Go to '1. RENAME SOURCES' and press **SELECT** ('Select').
- Press the ▼ ('Down') key until you reach "c. DISC2:DISC2".
- Press **SELECT** ('Select'). The first character 'D' will be highlighted in red.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to change characters. Change the first one to 'C'.
- Press the ► ('Down') key to move to the next character. Change it to 'D'.
- Use the ◀ ▶ ('Up' / 'Down') keys to move to each remaining character. Change to '<blank>'.
- When finished press **SELECT** ('Select') and then ▼ ▲ ('Down' / 'Up') to go to another Source, or...
- Press the **EXIT** ('Back') key to leave the submenu and return to the Setup Menu.

### 7.4.2 AUDIO IN FORMAT-MAIN

The Audio Input Format-MAIN Menu lets you assign a Digital or an Analog input format for each Source.





## 7. ADVANCED SET-UP continued ...

**Audio In Format–MAIN Selections apply to the MAIN Path only.** If you have selected **Digital** for a given source and connected the digital output from your source component, you can still use the **Analog Inputs** for that same source – these will then be available for other Paths (ZONE2, REC). This arrangement allows greater operating flexibility.

For example, say you had both DISC1 and DISC2 set to DIGITAL, the digital output of a CD Player CONNECTED to DISC2, the analog output of the same CD Player also to DISC2, and the digital output of a DVD Player to DISC1. You can then use either the Analog or Digital output of the CD player as follows:

Select MAIN (Zone / Path) and DISC2 (Source) and play a CD. Copy the MAIN Source to ZONE2 (section 5.5.1) and you will also hear the AVM 2's high-end CD sound in ZONE2. Now you want to watch a DVD and therefore switch MAIN to DISC1. Because MAIN is copied to ZONE2, the DVD's sound will also be directed to ZONE2, but you still want to hear the CD in ZONE2. The solution? Press ZONE2 (Zone / Path) and DISC2 and the CD sound returns to ZONE2... How? Through the analog inputs connected from the CD Player to DISC2.

### Audio In Format–MAIN Also Allows For Two Other Adjustments:

- **If Digital is selected:** Assign the **Type** of digital connection (RCA, TOS1, TOS2, or XLR).
- **If Analog is selected:** Adjust **Levels**. This allows the matching of source levels to each other, so that there are no large changes in volume as you change sources.

If a source is playing while you are making the Analog Level adjustment, you will notice a Vertical Bar Graph to the left of the –dB setting. In the On-Screen display, if this Bar Graph changes from Green to Pink you have gone into an overload condition. Adjust the level down until the display turns back to Green. It is good practice to set this even lower (especially if using sine wave test signals) by as much as –9dB, to provide greater headroom and lower any potential for clipping distortion. You can set the level within the range of –95.5 dB and +31.5 dB.

**Note:** DIRECT and FM/AM are analog only – digital inputs are not available for these sources.

Before making changes or adjustments in this menu, have all connected source components playing similar music material. Then, as you switch through each highlighted source, you will hear that component play. This lets you know that each component is correctly connected to the AVM 2, and it also allows for easy comparative level adjustments of analog sources.

### AUDIO IN FORMAT–MAIN Example #1: Change DISC2 Digital Input **Type** from 'RCA' to 'Toslink1' (TOS1).

- Make sure DISC2 source component is connected to TOS1 and playing.
- Enter the Setup Menu (section 7.1). Go to '2. AUDIO IN FORMAT–MAIN' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key until you reach "c. DISC2: Digital... RCA".
- Press **SELECT ('Select')**. 'RCA' will be highlighted in red.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to change to 'TOS1' (sound will now be heard).
- When finished, press **SELECT ('Select')** and then ▼ ▲ ('Down' / 'Up') to go to another Source, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

### AUDIO IN FORMAT–MAIN Example #2: Adjust the DIRECT source Analog **Level**.

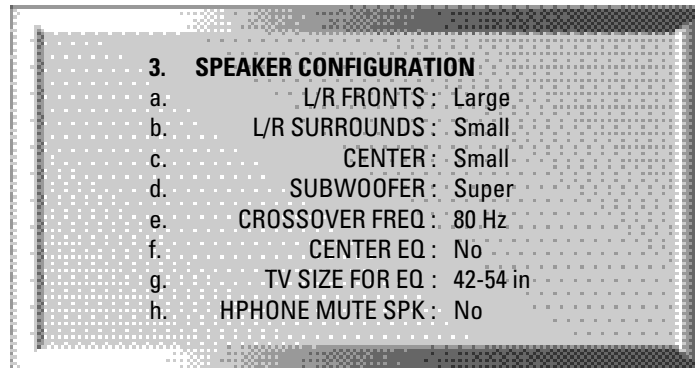
- Make sure DIRECT source component is connected to Analog Inputs and playing.
- Enter the Setup Menu (section 7.1). Go to '2. AUDIO IN FORMAT–MAIN' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key until you reach "b. DIRECT: Anlg Only... +0.0dB".
- Press **SELECT ('Select')**. '+0.0dB' will be highlighted in red.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to change the Level (keep the Bar Graph green).
- When finished, press **SELECT ('Select')** and then ▼ ▲ ('Down' / 'Up') to go to another Source, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

## 7. ADVANCED SET-UP continued ...

### 7.4.3 SPEAKER CONFIGURATION

The Speaker Configuration Setup Menu allows you to enter information about how many speakers you have in your system and their relative size. Here you will also set up the Bass Management for your whole system.

**Note:** This is an important setup that you must perform in order to optimally direct all audio information and achieve high quality sound reproduction from your system.



Entering information about the size of your speakers will enable the AVM 2 to control bass information so that it is not lost or distorted by smaller speakers, which may be unable to reproduce large amounts of bass.

- **Speaker Size** Choices are (menu 3.a-c): 'None', 'Small' and 'Large'.
- **Small or Large:** As a general guide, bookshelf or satellite speakers that are less able to reproduce bass are considered 'Small'. Floorstanding or big bookshelf speakers with either a big single woofer or multiple smaller woofers are considered 'Large'.
- Set L/R FRONTS first, then L/R SURROUNDS, CENTER and finally SUBWOOFER.

**Note:** Some combinations are not allowed such as setting the L/R FRONTS to 'Small' and SURROUNDS to 'Large'. The AVM 2 automatically changes these settings to prevent unallowed combinations.

#### (menu 3.c-d) No Center Channel or Subwoofer:

- If you do not have a Center Channel speaker or Subwoofer you must let your AVM 2 system know. Set CENTER to 'None' and / or SUBWOOFER to 'No'. The AVM 2 will then route Center Channel and bass information to the L/R FRONT speakers.

#### Bass Management:

The AVM 2 contains a sophisticated Bass Management system which will route bass information in the most appropriate way, based on your speaker size, to ensure the best sound performance possible.

#### (menu 3.d) Subwoofer Settings:

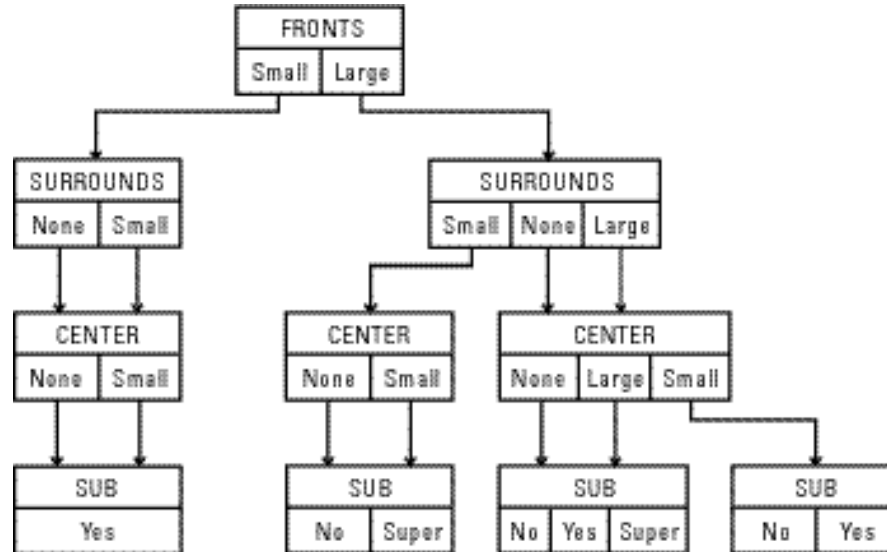
- **'No'** All bass is routed to L/R FRONTS which are automatically set to 'Large'.
- **'Yes'** Extracts the bass from all speaker(s) set to 'Small' and routes it to the SUBWOOFER. In addition, bass present in the '.1' LFE (Low Frequency Effects) channel in 5.1 Dolby Digital / DTS encoded material is routed to the SUBWOOFER.
- **'Super'** Extracts LFE bass, copies bass from speakers set to 'Large', or extracts bass from speakers set to 'Small', and routes this combined bass signal to the SUBWOOFER and 'Large' L/R FRONT and SURROUND speakers.

**Note:** When playing standard analog signals or PCM program material, such as CD, with your Front speakers set to 'Large' and the Subwoofer set to 'Super', you will require an external low-pass crossover for your subwoofer. Most self-powered subwoofers have one built-in.

## 7. ADVANCED SET-UP continued ...

### Dolby Configuration Flowchart:

The following Flow Chart summarizes all of the speaker combinations and subwoofer settings the AVM 2 supports for accurate DOLBY signal processing:



### Dolby Configuration Notes:

- If SURROUNDS are set to 'None', the L-Surround channel is directed to the L-Front channel, and the R-Surround channel is directed to the R-Front channel (except in Dolby Pro Logic mode).
- If CENTER is set to 'None', the center channel is directed to the L/R Fronts (this is also known as Phantom Mode).
- With respect to the LFE channel, if the SUBWOOFER is set to 'No', the LFE channel is directed to 'Large' L/R Front and Surround speakers; if set to 'Yes', the LFE channel is directed to the Subwoofer only; if set to 'Super', the LFE channel is directed to the Subwoofer and 'Large' L/R Front and Surround speakers.

### (menu 3.e) Crossover Frequency:

Crossover Frequency sets the lower limit of frequencies directed to any speaker set to 'Small', and the upper limit of frequencies that are extracted and directed to the SUBWOOFER.

Using the ◀ ▶ keys (**MASTER CONTROL KNOB**) choose a frequency within the 60Hz – 160Hz range that approximates the low frequency capability of the speakers in your system. Doing so will provide the best blend between the subwoofer and the other speakers in your system. Since bass is most dependent on your specific room acoustics, we recommend some experimentation with this adjustment to achieve best results.

### (menu 3.f) Center EQ:

When a Center speaker is installed in furniture or on top of a TV (as is often the case), its frequency response will change and this may affect the clarity of speech.

- With CENTER EQ set to 'Yes', the frequency response of the Center Channel output will slightly change to help make voices sound "clearer".

## 7. ADVANCED SET-UP continued ...

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### (menu 3.g) TV Size For EQ :

This is used to determine the magnitude of the Center EQ change. The sizes provided offer an easy-to-use general guideline. Since room/TV/furniture acoustics vary, you may wish to experiment to determine which setting is actually the best for you. Do the following listening test and determine which sounds the clearest: when listening to the center channel dialogue of 2 to 3 different DVD soundtracks. (In some situations, leaving the Center EQ off completely may sound better. Let your ears be the final judge!)

- Select the TV size category that is one higher than what you are using, and then listen. (The size categories are: 18" - 30" / 30" - 42" / 42" - 54" / 54" - 66" / 66" - 78".)
- Repeat, dropping one size category at a time.
- Leave the size setting in the category that provides the clearest dialogue, regardless of whether or not the size actually matches your TV.

### (menu 3.h) Hphone Mute Spk:

This determines whether or not the MAIN speakers turn off when a Headphone plug is inserted:

- **'Yes'** Will mute the MAIN speakers (only). The Front Panel LCD display will then read "HPHONE" instead of "MAIN" to indicate that adjusting Volume, Bass, Treble, and Balance will affect HEADPHONE only – MAIN settings remain unaffected while headphones are inserted.
- **'No'** MAIN speakers will continue to play when headphones are inserted. (To make headphone adjustments see sections 5.6 to 5.9.1.)

### SPEAKER CONFIGURATION Example #1: Change CENTER to 'Large'.

- Enter the Setup Menu (section 7.1). Go to '4. SPEAKER CONFIGURATION' and press **SELECT ('Select')**.
- Press the **▼ ('Down')** key until you reach "c. CENTER: Small".
- Use the **◀ ▶** keys (**MASTER CONTROL KNOB**) to change to 'Large'. (**Note:** This change will only be possible whenever L/R FRONTS are set to 'Large' and L/R SURROUNDS are set to 'None' or 'Large' (see configuration chart on page 38).
- When finished press **▼ ▲ ('Down' / 'Up')** to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

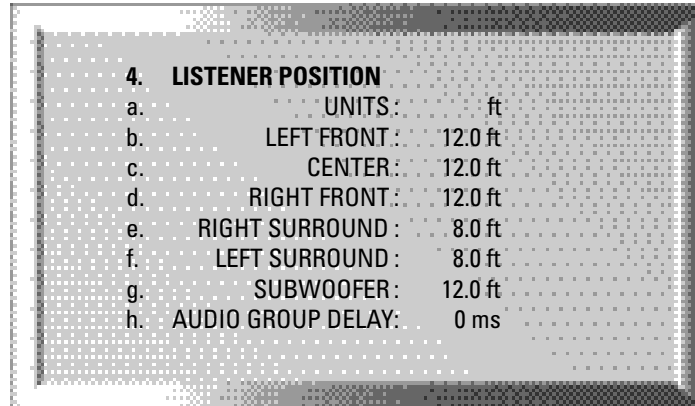
### SPEAKER CONFIGURATION Example #2: Change HPHONE MUTE SPK to 'Yes'.

- Enter the Setup Menu (section 7.1). Go to '3. SPEAKER CONFIGURATION' and press **SELECT ('Select')**.
- Press the **▼ ('Down')** key until you reach "h. HPHONE MUTE SPK: No".
- Use the **◀ ▶** keys (**MASTER CONTROL KNOB**) to change to 'Yes'.
- When finished press **▼ ▲ ('Down' / 'Up')** to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

## 7. ADVANCED SET-UP continued ...

### 7.4.4 LISTENER POSITION

The Listener Position Setup Menu lets you enter the distance from each speaker to the listening area. Ideally, speakers should be placed at a similar distance so that their sound arrives at the listening area at the same time. Since this is not always possible, the AVM 2 can insert a delay for speakers that are closer; this will allow sound from each speaker to arrive at the listening area at the same time.



#### (menu 4.a-g) Units and Distance Adjustment:

First choose the units you want to use (feet/meters). Then enter the distance from your primary listening area to each speaker (0-99 ft in 0.5 ft increments or 0-99 m in 0.2 m increments).

**Note:** If you are using Dipole (Diffuse) Surrounds, no delay is required since sound produced by dipoles is already in the reverberant domain acoustically. To set RIGHT SURROUND and LEFT SURROUND so that they have no delay, enter the same distance that you have set for RIGHT FRONT and LEFT FRONT (use the larger distance if RIGHT FRONT and LEFT FRONT are not the same).

#### (menu 4.h) Audio Group Delay:

Using line doublers / quadruplers, etc. causes a video delay which means that you will hear sound slightly ahead of the video picture. The Audio Group Delay will delay sound to all channels simultaneously by up to 84 milliseconds to compensate for this video delay.

The audio group delay required will vary by manufacturer – please check the owner’s manual of your particular doubler / quadrupler for recommended settings.

**LISTENER POSITION Example:** Change RIGHT FRONT to ‘9.5 ft’.

- Enter the Setup Menu (section 7.1). Go to ‘4. LISTENER POSITION’ and press **SELECT** (*‘Select’*).
- Press the ▼ (*‘Down’*) key until you reach “d. RIGHT FRONT: 12.0 ft”.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to ‘9.5 ft’.
- When finished press ▼ ▲ (*‘Down’* / *‘Up’*) to go to another Menu Item, or...
- Press the **EXIT** (*‘Back’*) key to leave the submenu and return to the Setup Menu.

### 7.4.5 SPEAKER LEVEL CALIBRATION

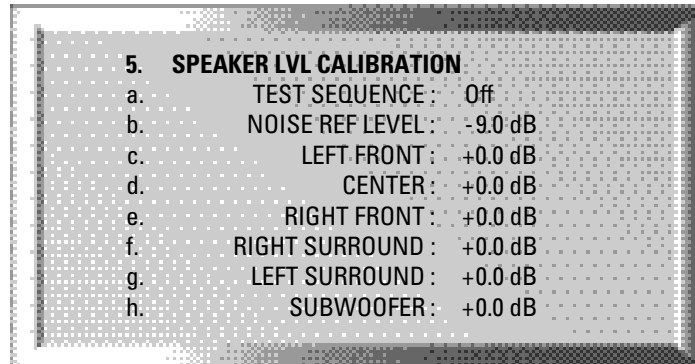
Speaker Level Calibration allows you to match the relative output level of each speaker at the listening position. For best results leave one of the FRONT speakers set to +0.0dB and then adjust the levels of the other speakers until they match (i.e. they have the same loudness).

## 7. ADVANCED SET-UP continued ...

**Note:** The FRONTS, CENTER, SURROUNDS, SUB, and BALANCE buttons on the Remote Control and Front Panel DO NOT affect settings in this menu, but rather allow adjustment of program material as may be required (section 5.6).

**Note:** The Speaker Configuration (section 7.4.3) must be done before the Speaker Level Calibration since any speaker set to 'None' will be skipped.

As a convenience, when you are in the Setup Menu both MAIN Volume and Mute still operate. Be sure that MAIN is unmuted, otherwise you will not hear sound in the Speaker Level Calibration.



### (menu 5.a) Test Sequence:

Lets you select whether the test noise will travel automatically from speaker to speaker (in 2 second intervals), or choose each speaker manually, or Off.

### (menu 5.b) Noise Reference Level:

Sets the master level of the Dolby shaped noise signal. The default -9.0dB generates the Dolby recommended output voltage at the analog outputs.

### Subwoofer Calibration:

The subwoofer noise bandwidth is specially designed to give you a meaningful comparison of subwoofer bass level to the levels of other speakers. When adjusting, increase Subwoofer Level until you can hear it and then lower it slightly until it "blends" with the other speakers. We also recommend playing music containing a lot of bass to help you find the most natural overall tonal balance between the subwoofer and the rest the speakers.

If you choose a Speaker Configuration that also directs bass to the L/RFRONTS, the Speaker Level Calibration will provide the subwoofer test noise, simultaneously, to both Subwoofer and L/R Fronts to let you set the bass balance between Subwoofer and L/R Fronts. With the level control on your subwoofer set to '0', adjust the subwoofer test noise so that it is just audible in the L/R Fronts. Then increase your subwoofer's level control to achieve a suitable bass balance.

**Note:** Since this setup calibrates all speaker levels for your listening area, use the Remote Control and sit in the primary listening chair when performing this test.

This calibration may be done by ear or by using a Sound Pressure Level (SPL) meter. When using an SPL meter, temporarily set the Subwoofer to 'Yes' in the Speaker Configuration menu (L/R Surrounds and Center will have to be set to 'Large' or 'None') so that the test noise comes from the Subwoofer only.

The test noise is pre-shaped to mimic the average music spectrum. The optimal SPL meter setting is 'flat', but 'B-' or 'C-weighting' may also be used.

Even if using an SPL meter always check by ear, and when in doubt trust your ears to set final levels.

## 7. ADVANCED SET-UP continued ...

### (menu 5.a) PROCEDURE FOR 'AUTO' TEST SEQUENCE:

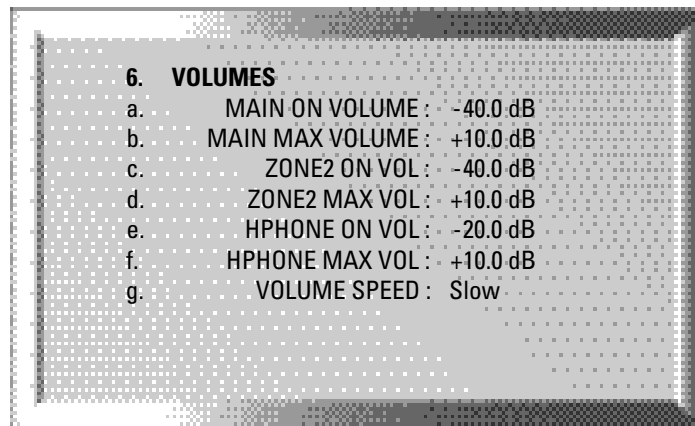
- Enter the Setup Menu (section 7.1). Go to '5. SPEAKER LVL CALIBRATION' and press **SELECT ('Select')**.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to set TEST SEQUENCE to 'AUTO'.
- Press the **SELECT ('Select')** key to start the automatic sequence.
- As each speaker plays, use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to adjust its loudness relative to other speakers. Once set, the sequence will automatically advance to the next speaker for adjustment. It will then continue to cycle speaker by speaker to allow you to fine tune all levels.
- Press the **EXIT ('Back')** key to stop the automatic sequence.

### (menu 5.a) PROCEDURE FOR 'MANUAL' TEST SEQUENCE:

- Enter the Setup Menu (section 7.1). Go to '5. SPEAKER LVL CALIBRATION' and press **SELECT ('Select')**.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to set TEST SEQUENCE to 'MANUAL'.
- Press the ▼ ▲ ('Down' / 'Up') keys to go from speaker to speaker.
- As each speaker plays, use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to adjust its loudness relative to other speakers.
- Press the **EXIT ('Back')** key to stop the manual sequence and set TEST SEQUENCE to 'OFF'.

### 7.4.6 VOLUMES

This setup menu allows you to define the power-on volume settings.



### (menu 6.a-f) MAIN / ZONE2 / HEADPHONE Volume Settings:

- **Power-On Volume:** Whenever you turn MAIN or ZONE2 on, all conditions remain the same as when they were last turned off, except Volumes. This avoids any potential 'surprises' of not knowing what volume someone had set when they last turned MAIN or ZONE2 off, and then having the power-on volume be either too loud or quiet. You can set independent volumes for MAIN-ON, ZONE2-ON and HEADPHONE-ON. Then when you turn MAIN on, ZONE2 on, or plug in your headphones, the volume for each will come on at the known levels you have set.
- **Maximum Volume:** These settings allow you to individually limit the maximum volume of MAIN, ZONE2 or HEADPHONE to avoid damaging your equipment and/or your ears. This can also serve as a Parental Volume Control feature.
- The range of settings available for MAIN is from -95.5 dB to +31.5 dB in steps of .5 dB, and for ZONE2 and HEADPHONE, the range is from -70.0 dB to +10.0 dB in 1.25dB steps. Remember that the ON setting can not be set higher than MAX setting.

## 7. ADVANCED SET-UP continued ...

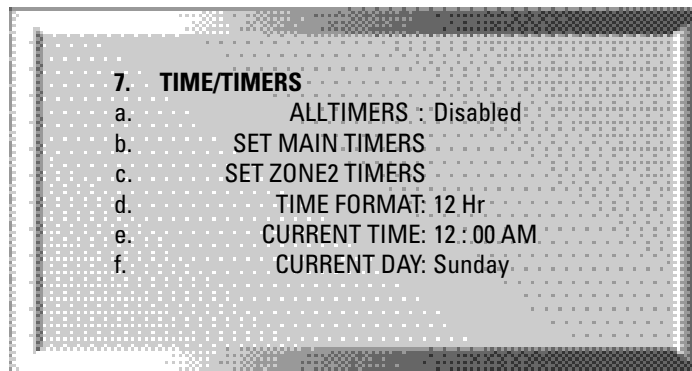
- **Volume Speed:** This sets how quickly the volume changes for each 'turn-of-the-knob' or press of the Remote Control Volume keys. Choose either 'Slow' or 'Fast'.

**VOLUMES Example:** Set ZONE2 Maximum Volume to '+5.0 dB'.

- Enter the Setup Menu (section 7.1). Go to '6. VOLUMES' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key until you reach "d. ZONE2 MAX VOL: +10dB".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to '+5.0 dB'.
- When finished press ▲ ▼ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

### 7.4.7 TIME / TIMERS

The time and date, plus 4 different timers are set in this menu. The timers in the AVM 2 are similar to an alarm clock, but allow two different timer settings for each of MAIN and ZONE2. Menu items 7.d to 7.f will be described first, followed by timer options, 7.a to 7.c.



#### (menu 7.d-f) Setting Current Time and Day:

- Enter the Setup Menu (section 7.1). Go to '7. TIME / TIMERS' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key until you reach "d. TIME FORMAT: 12 Hr".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) and choose '12 Hr' or '24 Hr'.
- Press the ▼ ('Down') key to go to "c. CURRENT TIME: 12:00 AM".
- Press **SELECT ('Select')**. '12' will be highlighted in red.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to set the current hour. Continuing through '12' will advance the AM/PM settings.
- Press the ▶ ('Down') key. '00' minutes will be highlighted.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to set current minutes.
- Press the **SELECT ('Select')** or **EXIT ('Back')** key to go back to the menu line.
- Press the ▼ ('Down') key to go to "f. CURRENTDAY: Sunday".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to set the current day.

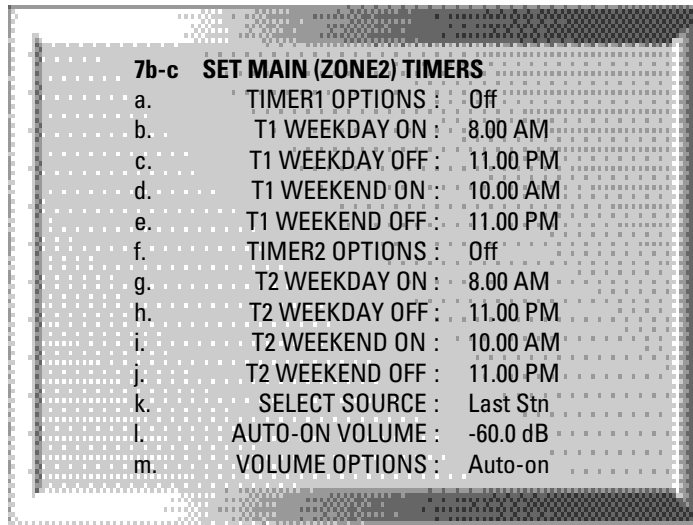


## 7. ADVANCED SET-UP continued ...

### (menu 7.a-c) MAIN / ZONE2 Timers:

- **All Timers:** This allows you to 'Enable' or 'Disable' all Timer options for both MAIN and ZONE2, regardless of their settings.
- Pressing **SELECT** on the '**SET MAIN TIMERS**' and '**SET ZONE2 TIMERS**' menu items brings up their individual submenus. These allow you to set MAIN and ZONE2 to turn on automatically and separately in the ways and times you specify. You could, for example, wake up with an FM station or your favorite CD playing in your bedroom (ZONE2), and later have the TV news on in the family room (MAIN) when you sit with your morning coffee (see also section 7.2).

**Note:** The Timer Submenu setup procedure is the same for both MAIN and ZONE2.



### (menu 7.b-c/a-j) Using the Timers:

There are two Timers to allow greater flexibility. You can not only set individual week and weekend auto-on times, but you can set them twice – once for Timer1 and again for Timer2. This allows you to have, for example, separate morning and afternoon settings and do the following: MAIN comes on in the morning (T1), you manually turn MAIN off when you leave. With T2, MAIN comes on again in the afternoon just before you get home. Finally, T2 can turn off MAIN at the end of the day.

### (menu 7.b-c/a or f) Timer1 or 2 Options: Choices are as follows:

- 'Off' – The Auto-On is disabled and will not come on at any time or date.
- 'Week' – The Auto-on will operate for Monday to Friday only.
- 'Wkend' – The Auto-on will operate for Saturday and Sunday only.
- 'Wk+Wkend' – The Auto-on will operate for every day of the week.

(menu 7.b-c/b or g) **T1 or T2 WEEKDAY ON:** Sets the Monday to Friday turn-on time.

(menu 7.b-c/c or h) **T1 or T2 WEEKDAY OFF:** Sets the Monday to Friday turn-off time.

(menu 7.b-c/d or i) **T1 or T2 WEEKEND ON:** Sets the Saturday and Sunday turn-on time.

(menu 7.b-c/e or j) **T1 or T2 WEEKDAY OFF:** Sets the Saturday and Sunday turn-off time.

## 7. ADVANCED SET-UP continued ...

### menu 7.b-c/k) Select Source:

Allows you to select the source that will play when either Timer1 or Timer2 turns a Zone / Path On. All sources are available (even your favorite FM/AM station). Be sure that your selected **source** and **power amplifier** are turned on, or will be at the Timer turn-on time – if your components are equipped with trigger inputs, you can set an AVM 2 Trigger to turn them on (see section 7.4.8).

The sources available for Timer turn-on are: TV, SAT, VCR, AUX, DISC1, DIRECT, DISC2, TAPE, and Last Stn (the tuner setting when AVM 2 was last turned off). For example, to select a Source for the ZONE2 Timer:

- Enter the Setup Menu (section 7.1). Go to '7. TIME/TIMERS' and press **SELECT ('Select')**.
- Press the ▼ (**'Down'**) key until you reach "c. SET ZONE2 TIMERS".
- Press **SELECT ('Select')**. The '7c. SET ZONE2 TIMERS' Submenu will appear.
- Press the ▼ (**'Down'**) key until you reach "k. SELECT SOURCE".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to desired Source Component.
- Press the **EXIT ('Back')** key to leave this submenu and return to TIME / TIMERS menu.

If you selected 'Last Stn' as your Timer turn-on source, you can leave it set to the last station you were listening to, or choose one of your preset stations. For example, to have the Zone / Path Timer turn-on to a Preset Station, do the following from the 'k. SELECT SOURCE' menu line (above):

- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Last Stn'.
- Press **SELECT ('Select')** to highlight 'Last Stn'.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to change to desired FM/AM Preset. These will scroll from 'AM 1-1' to 'AM 1-6' to 'FM1-1' through to 'FM3-6' and back to 'Last Stn'.
- Press the **SELECT** or **EXIT ('Back')** key to go back to the menu line.

### (menu 7.b-c/l) Auto-On Volume:

Sets the Volume that will play when Timer1 or Timer2 turns the Power-On.

### (menu 7.b-c/m) Volume Options:

Choose whether you want the Volume to come on immediately at the 'AUTO-ON' Volume setting or 'RAMP-UP' to that setting. With Ramp-Up the volume starts at the minimum volume for that Zone / Path and slowly increases until the 'Auto-On Volume' setting is reached.

**TIME / TIMERS Example:** Change ZONE2, TIMER2 to come on Weekdays at 7:35 AM.

- Enter the Setup Menu (section 7.1). Go to '7. TIME/TIMERS' and press **SELECT ('Select')**.
- Press the ▼ (**'Down'**) key until you reach "c. SET ZONE2 TIMERS".
- Press **SELECT ('Select')**. The '7c. SET ZONE2 TIMERS' Submenu will appear.
- Press the ▼ (**'Down'**) key to reach "f. TIMER2 OPTIONS: Off".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Week'.
- Press the ▼ (**'Down'**) key until you reach "g. T2 WEEKDAY ON: 8:00 AM".
- Press **SELECT ('Select')**. The hour is now in red, press the ▲ ▼ keys (**MASTER CONTROL KNOB**) to set the hour to '7' AM. (Continuing through '12' will advance the AM/PM settings.)
- Press the ▶ (**'Down'**) key. '00' minutes will be highlighted.
- Use the ▲ ▼ keys (**MASTER CONTROL KNOB**) to set the minutes to '35'.
- Press the **EXIT ('Back')** key to leave this submenu and return to TIME / TIMERS menu.

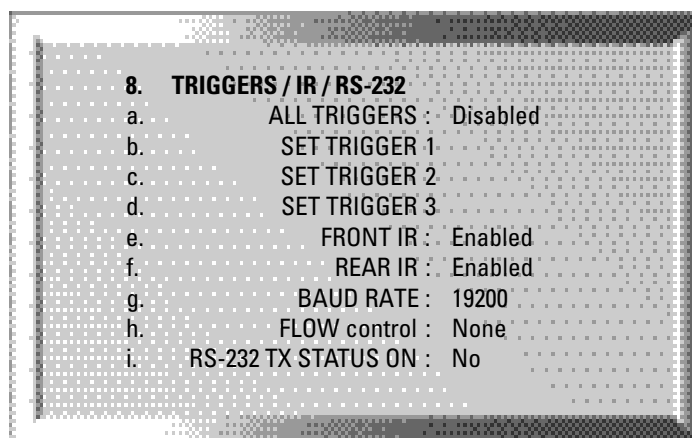
## 7. ADVANCED SET-UP continued ...

### 7.4.8 TRIGGERS / IR / RS-232

Three Trigger Outputs are provided on the back of the AVM 2. These allow you to remotely turn other components on or off, such as Power Amplifier, CD Changer, Video Projector, etc. To have their power On/Off controlled by the AVM 2, simply connect a Trigger output from the AVM 2 to the Trigger input of the other component. For components that do not have a trigger input, use a triggerable power bar (see your dealer). The Triggers menu allows you to determine the criteria by which other components are turned on or off.

There is a quarter of a second delay between each trigger to minimize momentary line voltage drops caused by switching on too many devices at the same time.

- **Trigger1 and Trigger2:** Provides standard trigger outputs of 12 volts with up to **50mA**, suitable for typical source components and most amplifiers.
- **Trigger3:** Provides a standard trigger output of 12 volts with up to **200mA** source current, suitable for motorized projector equipment and very high power amplifiers.
- **All 3 Triggers:** Require a mono 3.5mm mini plug to the AVM 2, and usually the same at the component end.

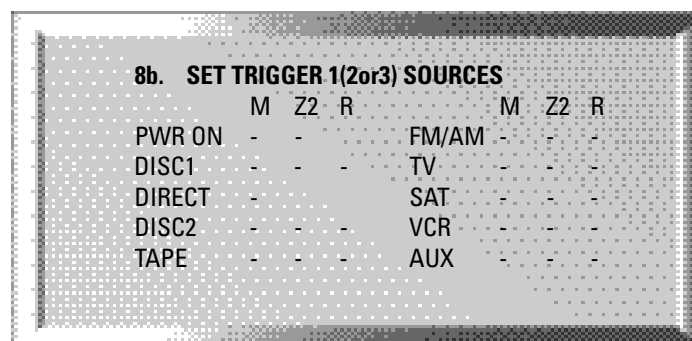


#### (menu 8.a) All Triggers:

Allows you to 'Enable' or 'Disable' all Trigger options for MAIN and ZONE2, regardless of their settings. You can also select 'RS-232 Ctrl' which allows external control over the Enable / Disable condition for all triggers.

#### (menu 8.b-d) SET TRIGGER 1, 2, 3:

When you select Trigger 1, 2, or 3 the following control chart appears for each trigger:



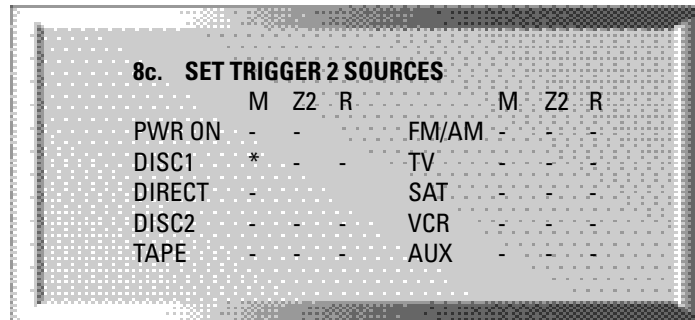
## 7. ADVANCED SET-UP continued ...

Under each of the three AVM 2 Zones / Paths, MAIN (**M**), ZONE2 (**Z2**), and RECORD (**R**), a variety of Sources are available to choose from to set the Triggers.

In the Control Chart, you will notice that there are 27 available Sources (27 dashes), that could be used to activate that particular Trigger.

For Trigger 1, 2, or 3 to activate, simply enter that Trigger's Control Chart and replace the '-' with an '\*' for the sources that you wish.

**For Example:** From the following Trigger Control Chart – TRIGGER 2 will activate whenever the MAIN Zone / Path is set to the DISC1 Source. This will supply an output of 12 volts with up to 50mA at the Trigger2 output.



	M	Z2	R		M	Z2	R
PWR ON	-	-	-	FM/AM	-	-	-
DISC1	*	-	-	TV	-	-	-
DIRECT	-	-	-	SAT	-	-	-
DISC2	-	-	-	VCR	-	-	-
TAPE	-	-	-	AUX	-	-	-

### (menu 8.e-f) FRONT IR and REAR IR Settings:

Allows you to 'ENABLE' or 'DISABLE' the IR Receiver located at the front, or the IR Input located at the back of the AVM 2. This is useful when an IR repeater, connected to the AVM 2 rear IR Input, has to be located in the same room as the AVM 2. In such a case you may have two IR signals being received by the AVM 2 - One from the Remote Control and one from the repeater on the rear. The problem is that rear signal is delayed, which may confuse the IR Receivers' control circuits. Disabling the Front IR in this case solves the problem.

At times, the IR signal may still find its way to the internally mounted rear IR Receiver via the vents in the top cover. This could also cause confusion for the AVM 2. If this input is not used, simply Disable the Rear IR Receiver to solve any possible problems.

**Note:** If the red Indicator LED on your Remote Control flashes when you press an active key, but the AVM 2 does not respond, it may be because the FRONT IR was changed to 'DISABLED'. If this has occurred it can only be Enabled again by using the AVM 2 Front Panel buttons to enter the Setup Menu – go to TRIGGERS/IR/RS-232 (menu 8), then go to FRONT IR (menu 8.e) and change the setting back to 'ENABLED'.

### (menu 8.g-h) Baud Rate and Flow Control:

The Baud Rate (adjustable from 1200 to 115200 bps), and Flow Control ('RTS', 'CTS' or 'NONE'), allow for configuring the serial port communication parameters. This is normally for use by the factory and dealer/installers only.

### (menu 8.i) RS-232 TX Status ON Settings:

Echoes front panel and remote control commands, status changes, and control information through the RS-232 port. This is normally for use by the factory and dealer/installers only.

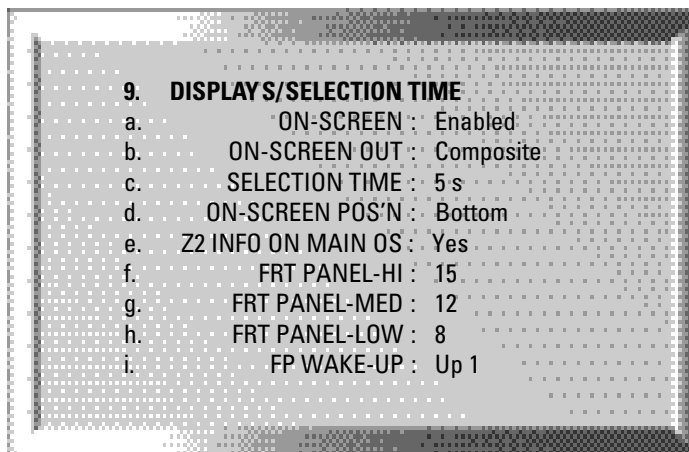
## 7. ADVANCED SET-UP continued ...

**TRIGGERS / IR / RS232 Example:** Activate Trigger1 and 2 when MAIN is turned ON with TV as the Source.

- Enter the Setup Menu (section 7.1). Go to '8. TRIGGERS/IR/RS-232' and press **SELECT ('Select')**.
- Upon entering this menu item, "8a. ALL TRIGGERS: Disabled" will be highlighted in red.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Enabled'.
- Press the ▼ ('Down') key to go to "b. SET TRIGGER 1".
- Press **SELECT ('Select')**.
- Use the ▼ ▲ ('Down' / 'Up') keys to go to 'TV'.
- Press **SELECT ('Select')**.
- Use the ▼ ▲ keys (**MASTER CONTROL KNOB**) to change the '-' to '\*'.
- Press the **EXIT ('Back')** key twice to leave this submenu.
- Press the ▼ ('Down') key to go to "c. SET TRIGGER 2".
- Press **SELECT ('Select')**.
- Use the ▼ ▲ ('Down' / 'Up') keys to go to 'TV'.
- Press **SELECT ('Select')**.
- Use the ▼ ▲ ('Down' / 'Up') keys to change the '-' to '\*'.
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

### 7.4.9 DISPLAYS / SELECTION TIME

This Setup Menu allows you to configure both the On-Screen display, Front Panel display and Selection Time.



#### (menu 9.a) On-Screen:

'Bypassed' turns the On-Screen display OFF; 'Enabled' turns it ON. If you choose 'Bypassed', you will have to rely solely on the Front Panel display.

#### (menu 9.b) On-Screen Out:

With the On-Screen 'Enabled' you will then have to choose which output the On-Screen display will be directed to, either 'Composite' or 'S-Video'. If you have the Video Output of the AVM 2 connected to the Composite Video Input of your TV Monitor, choose 'Composite'. If you have the Video Output of the AVM 2 connected to the S-Video Input of your TV Monitor, choose 'S-Video'.

## 7. ADVANCED SET-UP continued ...

**Note:** The On-Screen display is not available for Component Video.

**Note:** If you have connected and selected 'Composite' for ON-SCREEN OUT and afterwards change it to 'S-Video', the Setup Menu will immediately disappear because doing so has actually 'disconnected' the On-Screen display from your TV Monitor. If this has occurred, immediately press the ► key (**MASTER CONTROL KNOB**) to return to 'Composite'. You can also correct this using the AVM 2 Front Panel keys to enter the Setup Menu – go to DISPLAY / SELECTION TIME (menu 8), then ON-SCREEN OUT (8.b) and change back to 'Composite'. (Of course the same would occur if you were connected to S-Video and changed to Composite.)

### (menu 9.c) Selection Time:

After a key is used on either the Front Panel or Remote Control (e.g. Vol, etc.) and the 'Selection Time' has elapsed, the On-Screen displayed text will disappear and the Front Panel display will go dim. You can change this Selection Time; choose from '1 to 30 s' or 'Always On'. This selection time also applies to how long ZONE2, REC or HEADPHONE information remains displayed before returning to MAIN display information.

### (menu 9.d) On-Screen Pos'n:

This allows you to position the On-Screen display to reduce the chance of it interfering with the on-screen display positions of other video components (e.g. Satellite Receiver or a TV Monitor's own display, etc.). Choose from: 'Bottom', 'Mid', or 'Top'.

### (menu 9.e) Z2 Info On MAIN OS:

Lets you select whether or not the On-Screen display will show ZONE2 information whenever ZONE2 adjustments are made. If ZONE2 is set up to use the Remote Control (with an IR repeater, etc. – consult dealer), you may not want to see ZONE2 adjustment someone is making while you are perhaps watching a DVD. At other times, when you are making adjustments to ZONE2 in the same room as the AVM 2 you may want to see the ZONE2 information displayed.

### (menu 9.f-i) Front Panel Display Adjustments:

- **Brightness:** Simultaneously adjusts the intensity level of the LCD display and LED indicators. Three separate adjustments can be made – HI, MED and LOW. Use HI to set the daytime level, MED for the evening level and LOW for the nighttime level. The DISPLAY key cycles through these settings.

As you make brightness adjustments, the LCD display and LED's change immediately to allow you to see the result of the setting.

- **FP Wake-up:** After the Front Panel has dimmed, it may immediately wake-up to a brighter level when you press any active key (e.g. Vol, etc.). You may choose to have the Front Panel display wake-up at one brightness level higher than the dimmed level, or at the highest level. Choose '1 UP' or 'HI'.

**DISPLAY/SELECTION TIME Example:** Change the ON-SCREEN OUT to 'S-Video'.

- Enter the Setup Menu (section 7.1). Go to '8. DISPLAY/SELECTION TIME' and press **SELECT ('Select')**.
- Press the ▼ (**'Down'**) key until you reach "b. ON-SCREEN OUT: Composite".
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'S-Video'.
- When finished press ▼ ▲ (**'Down' / 'Up'**) to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

## 7. ADVANCED SET-UP continued ...

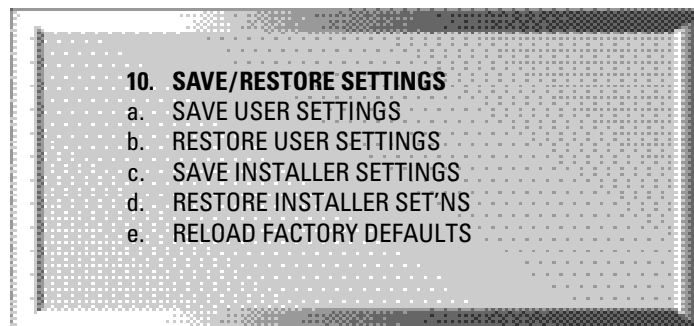
### 7.4.10 SAVE / RESTORE SETTINGS

The AVM 2 enables you to save the entire setup configuration, except for the time and day. Two separate save files are provided: SAVE USER SETTINGS and SAVE INSTALLER SETTINGS. If your dealer does the setup, they can SAVE their setup configuration to their own INSTALLER file. You may also decide to make further setup adjustments – SAVE those settings separately to your own USER file. FM/AM Tuner presets are also saved separately in USER SETTINGS and INSTALLER SETTINGS.

Once saved, if someone makes any unwanted changes to the settings of your AVM 2, rather than go through the entire setup configuration again, you can quickly and easily RESTORE either the dealer's INSTALLER settings or your USER settings. FM/AM Tuner presets that were saved in USER SETTINGS or INSTALLER SETTINGS will also be restored.

The original FACTORY DEFAULTS can also be RELOADED at any time to reset the AVM 2 back to the original factory settings. Individual speaker level, balance and bass/treble adjustments described in sections 5.6, 5.7, and 5.9 will be reset to 0 dB. Surround effect settings described in section 5.10 will be reset to 'None'.

**Note:** The first time you plug in the AVM 2's AC power cord, the factory defaults are automatically loaded and active.



#### (menu 10.a, 10.c) Save Settings:

You can Save Settings with or without the use of a Password. Passwords are very easy to set up (see section 7.4.11) and will protect both USER and INSTALLER files from being changed by anyone other than whomever has the Password. **New SAVES will overwrite the previously saved file.** The AVM 2 will prompt you to confirm that you want to over-write currently saved settings. Press the **EXIT ('Back')** key at any time to abort a save.

#### (menu 10.b, 10.d-e) Restore or Reload Settings:

You may RESTORE USER SETTINGS, INSTALLER SETTINGS, or RELOAD FACTORY SETTINGS at will. The AVM 2 will prompt you to confirm that you want to replace the current settings. Press the **EXIT ('Back')** key at any time to abort a restore.

#### SAVE / RESTORE Example #1: 'SAVE USER SETTINGS'.

**Note:** FM/AM Tuner presets will also be saved in USER SETTINGS.

- Enter the Setup Menu (section 7.1). Go to '10. SAVE/RESTORE SETTINGS' and press **SELECT ('Select')**.
- Upon entering this menu item, "10a. SAVE USER SETTINGS" will be highlighted in red.
- Press **SELECT ('Select')**. You will be asked to confirm that you want to over-write current settings.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) and change to 'Yes'. If you are using a Password, you will be asked for it. Use the 1 – 6 keys to enter your Password. The On-Screen display message will then say 'Saving Successful', the Front Panel display says 'Done!'.
- When finished press ▼ ▲ (**'Down' / 'Up'**) to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

## 7. ADVANCED SET-UP continued ...

### SAVE / RESTORE Example #2: 'RESTORE INSTALLER SETTINGS'.

**Note:** FM/AM Tuner presets that were saved in INSTALLER SETTINGS will also be restored.

- Enter the Setup Menu (section 7.1). Go to '10. SAVE/RESTORE SETTINGS' and press **SELECT** ('Select').
- Press the ▼ ('Down') key until you reach "d. RESTORE INSTALLER SET'NS".
- Press **SELECT** ('Select'). You will be asked to confirm that you want to restore installer settings.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Yes' and press **SELECT** ('Select'). On-Screen display message will then say 'Saving Successful', the Front Panel display says 'Done!'.
- When finished press ▼ ▲ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT** ('Back') key to leave the submenu and return to the Setup Menu.

### SAVE / RESTORE Example #3: 'RELOAD FACTORY DEFAULTS'.

**Note:** The current time, FM/AM Tuner presets, and surround effect settings (section 5.10) will be retained. Individual speaker level, balance, and bass/treble adjustments (sections 5.6, 5.7, and 5.9) will be reset to 0 dB.

- Enter the Setup Menu (section 7.1). Go to '10. SAVE/RESTORE SETTINGS' and press **SELECT** ('Select').
- Press the ▼ ('Down') key until you reach "e. RELOAD FACTORY DEFAULTS".
- Press **SELECT** ('Select'). You will be asked to confirm that you want to 'reload factory settings'.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Yes' and press **SELECT** ('Select'). On-Screen display message will then say 'Saving Successful', the Front Panel display says 'Done!'.
- When finished press ▼ ▲ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT** ('Back') key to leave the submenu and return to the Setup Menu.

#### 7.4.11 LOCKOUT / PASSWORDS

Passwords can be used to protect the Saved User and Installer settings. Once you have set a password, it can also be used as a Lockout to prevent all Setup Menu settings from being changed by anyone other than those who have Passwords.



#### (menu 11.a) Set Setup Menu Lockout:

You must enter a User or Installer Password before the Lockout feature can be used. When set to 'Yes' this prevents anyone without a Password from entering the Setup Menu. When you attempt to enter the Setup Menu, you will be asked for your Password – either the USER or INSTALLER Password must then be entered before you will be allowed to continue.



## 7. ADVANCED SET-UP continued ...

### (menu 11.b-c) Set User or Installer Password:

When setting the USER or INSTALLER Password, you will be asked to enter a four digit number. Pick one that you will be able to easily remember. To enter that number use the **1 – 6** keys on the Remote Control or the **1 – 6** FM/AM Preset buttons on the Front Panel. You can also change an existing password by first entering the old one, and then entering (and confirming) a new one.

### LOCKOUT/PASSWORDS Example #1: 'SET USER PASSWORD'.

- You must first enter USER or INSTALLER Password.
- Enter the Setup Menu (section 7.1). Go to '11. LOCKOUT/PASSWORDS' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key to go to "b. SET USER PASSWORD".
- Press **SELECT ('Select')**. You will be asked to enter a four digit number. Use the **1 – 6** keys to do so. If you are changing your Password you will be asked to enter your old Password first. You will also be asked to confirm your new Password (re-enter your new Password).
- When finished press ▼ ▲ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

### LOCKOUT/PASSWORDS Example #2: 'SET SETUP MENU LOCKOUT'.

- Enter the Setup Menu (section 7.1). Go to '11. LOCKOUT/PASSWORDS' and press **SELECT ('Select')**.
- Upon entering this menu item, "10a. SET SETUP MENU LOCKOUT" will be highlighted in red.
- Press **SELECT ('Select')**. You will be asked to enter your Password. Enter either the USER or INSTALLER Password will work. Use the **1 – 6** keys to do so.
- Use the ◀ ▶ keys (**MASTER CONTROL KNOB**) to change to 'Yes' or 'No'.
- Press **SELECT ('Select')** or **EXIT ('Back')**.
- When finished press ▼ ▲ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

### LOCKOUT/PASSWORDS Example #3: 'CLEARING THE USER PASSWORD'.

- Enter the Setup Menu (section 7.1). Go to '11. LOCKOUT/PASSWORDS' and press **SELECT ('Select')**.
- Press the ▼ ('Down') key to go to "b. SET USER PASSWORD".
- Press **SELECT ('Select')**. You will be asked to enter your old Password. Use the **1 – 6** keys to do so.
- When asked for your new Password press the ▶ ('Down') key four times. You will also be asked to confirm your new Password, press the ▶ ('Down') key four times again. Message will then say 'User Password Removed'.
- When finished press ▼ ▲ ('Down' / 'Up') to go to another Menu Item, or...
- Press the **EXIT ('Back')** key to leave the submenu and return to the Setup Menu.

## 8. SOFTWARE UPDATING

The operational characteristics of the AVM 2 are controlled by a Software program that resides in Flash Memory. The Software is easily upgradeable through the RS-232 port on the Rear Panel. The new Software Update can be installed by downloading a new Installer and support files from our web site. Afterwards, connect the AVM 2 to your computer's serial port in order to transfer the file.

**Note:** All saved USER, and INSTALLER Settings and Passwords are retained and not overwritten by the Software updates!

### 8.1 SOFTWARE VERSION IDENTIFICATION

If you want to know the Software Version you have in your AVM 2, press the STATUS key. The Front Panel display will look something like this:



Please contact your dealer, or visit the AVM 2 page on our web site at [www.sonicfrontiers.com](http://www.sonicfrontiers.com), to find the latest Software Version, and any owners manual updates that go along with new versions.

### 8.2 SOFTWARE UPDATING VIA YOUR DEALER

To do this, you will have to take your AVM 2 to your Authorized Anthem Dealer. To save yourself time and trouble, please remember to call your dealer first to find out if you should get the latest Software Version, and then arrange a time to install the update.

**Note:** Your dealer may charge for this service.

### 8.3 SOFTWARE UPDATING VIA YOUR COMPUTER AND THE INTERNET

To update the Software through your computer, you will need the following:

- Access to the Internet.
- Serial cable – straight wired, with one end DB9 male for the AVM 2, and the other, DB9 female or DB25 female for your computer.

**Note:** Typically, a cable length of up to 100 feet (33 meters) will work for a long distance connection to your computer. You may also install this cable permanently to the AVM 2, enabling easy future updates, without the need to disconnect the AVM 2 from your system.

#### Computer System Requirements:

- PC:**
- Win9x or Win2000.
  - 1 Meg free space on the hard drive.
  - Serial Com port (COM1 to COM4). The software will automatically detect the COM port being used.
- MAC:**
- MacOS 7.6.1 or higher with 32 Meg of RAM.
  - 3 Meg free space on the hard drive.
  - Adapters for serial cable – please see information included with the Software update.

## 8. SOFTWARE UPDATING continued ...

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### To Download the Software Update to Your AVM 2:

1. First of all, find out which Software Version you currently have by pressing the Status button on the Front Panel of your AVM 2.
2. Go to the AVM 2 page on the SONIC FRONTIERS web site ([www.sonicfrontiers.com](http://www.sonicfrontiers.com)) and locate the latest AVM 2 Software Version Update. Compare it to your Software Version. Proceed only if your version is a lower number (indicating that it is older).
3. **With a PC do the following:**
  - a) Using your computer's mouse, right click on the download icon. You will then be asked where to save a file called 'AVM 2 Software Update.exe' – save it to your computer's desktop.
  - b) Once complete, click on the downloaded file on your desktop and it will self-extract to a folder called 'AVM 2 Software Update'. You may be asked where to save this folder – save it to your desktop also. You may then delete (recycle bin) the 'AVM 2 Software Update.exe' file.
4. **With a MAC do the following:**
  - a) Using your computer's mouse, double click on the download icon. You will then be asked where to save a file called 'AVM 2 Software Update.sit' – save it to your computer's desktop.
  - b) Once complete, it will immediately self-extract to a folder called 'AVM 2 Software Update,' which will be placed on your desktop. You may then delete (trash) the AVM 2 Software Update.sit file.
5. Ensure that your current AVM 2 Setup configuration is saved (see section 7.4.10).
6. Turn your AVM 2 off and **disconnect the power cord** to prevent the possibility of a static discharge when the serial port is connected. Your tuner presets, speaker level settings, bass/treble, etc. are automatically written to memory if the line voltage is disconnected or during a power failure.
7. Using the serial cable (and adapters for MAC), connect your computer to the AVM 2 to via the 9-pin female RS-232 port on the Rear Panel. Updating does not require moving the AVM 2 or disconnecting it from your system, as long as you can connect your computer to the RS-232 port.
8. The AC power cord of the AVM 2 must then be plugged back in, but MAIN or ZONE2 power does not have to be turned on.
9. Open the AVM 2 Software Update folder. The 'Read Me First' file lists software changes for this Version and outlines the most current instructions on how to load the Software Upgrade into your AVM 2.
10. Click (PC) or double click (Mac) on the file called AVM 2 Version 1.xx. Install in the AVM 2 Software Update folder. Click on the Install Upgrade Now button. In a few minutes the install and verification will be completed. The AVM 2 will then turn itself OFF for a forced re-boot.
11. Once complete you may disconnect the serial cable from the Rear Panel if you wish.
12. Turn on the AVM 2 and adjust the current time (see section 7.4.7 menu 7.e).
13. **Restore Settings?** You do not need to Restore or Recall any settings after the Update procedure. The AVM 2 will retain the settings that were in use before the Update. You will, however, have to adjust the Current Time, since the internal clock is not active while the AVM 2 is unplugged or while the Update procedure is in progress. See section 7.4.7, setup menu 7.e, to adjust the Current Time.

# WARRANTY

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## **CANADA & USA**

Sonic Frontiers International (SFI) warrants to the purchaser that each Anthem AVM 2 is free from defects in workmanship and materials, during normal use and service, for a period of five (5) years from the date of sale. To receive this warranty, the original purchaser must complete the enclosed Warranty Registration Card and mail it to SFI within thirty (30) days from the date of purchase. During the warranty period, SFI will repair or replace any defective components parts free of charge. Warranty applies to the original purchaser only; it is not transferable.

If a problem or defect is discovered in your Anthem AVM 2, please contact your Authorized Anthem Dealer. It is the Dealer's responsibility to determine the nature of the problem and arrange for the appropriate replacement parts, or the return of the AVM 2 to SFI. A Return Authorization (RA) number must be obtained in advance from SFI's Service Department before any product can be returned to SFI for any reason:

Telephone: 905-829-3838 ext. 240 (9 AM - 5 PM EST, voice mail 24 hrs.)  
Fax: 905-829-3033  
E-mail: [sfitech@sonicfrontiers.com](mailto:sfitech@sonicfrontiers.com)

The RA Number must be clearly visible on the outside of the shipping carton for SFI to accept the return. Product shipped to SFI without a RA Number will be refused and returned to the sender, freight collect. Product shipped to SFI for repair must have shipping and insurance prepaid by the original purchaser, packaged in the original packing carton and material and should be accompanied by a written description of the defect. To receive service under warranty, an accompanying copy of the original sales receipt is required. Product repaired under warranty will be returned shipping and insurance prepaid by SFI (within North America only). All other repairs are subject to charges for labor, parts, return shipping, and insurance. SFI will accept no responsibility for any damage occurring to an AVM 2 that is shipped in any type of packing carton and material other than the original packing carton and material.

This warranty is void if the product has been operated or handled other than in accordance with the instructions in this Operating Manual or otherwise abused, misused, damaged by accident or neglected in transport, tampered with, modified, or repaired by anyone other than SFI or an authorized SFI service center. Regular maintenance is not covered by this warranty. If inspection by SFI discloses that the repair required to the product is not covered by this warranty, regular repair charges shall apply.

Additional freight charges to markets outside of Canada and USA will apply.

## **Disclaimer of Liability**

Under no circumstances does Sonic Frontiers International assume liability or responsibility for injury or damages sustained in the use or operation of this product, or for damages to any other products connected to it.

In no event shall SFI, its agents, representatives, or employees, be responsible for any incidental or consequential damages. Some jurisdictions do not allow limitations of incidental or consequential damages, so this exclusion may not apply to you.

SFI reserves the right to make design changes or improvements to this product without any obligation to revise prior versions. All specifications are subject to change without notice.

On the expiration of the warranty period all liability of SFI in connection with the product shall terminate.

This warranty constitutes the only warranty applicable to products sold by SFI. No other warranty or condition, statutory or otherwise, expressed or implied, shall be imposed upon SFI, nor shall any representation made by any person, including a representation by a representative or agent of SFI, be effective to extend the warranty coverage provided herein.

# WARRANTY continued ...

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## **Frequently Asked Warranty Questions**

### **What is the FLOOR MODEL Warranty?**

Display products sold by an Authorized Sonic Frontiers / Anthem Dealer are covered under the same warranty terms, except that the warranty period commences at the date of the dealer invoice, not the customer's invoice, and cosmetic flaws, if there are any, are excluded.

### **Is there a Warranty on TRADE-INS?**

The balance of the warranty can be transferred on used product only if the product is traded in at an Authorized Sonic Frontiers / Anthem Dealer, who may resell the product with the remaining warranty if it is cosmetically acceptable, in perfect working condition, and has not been internally or externally altered in any way. The Dealer must call SFI to provide the serial number of such a product so that the warranty may be registered to the new owner.

### **What is the USED EQUIPMENT WARRANTY?**

The standard SFI warranty is not valid for used product purchased from a non-authorized dealer or private sale. However, a 3-year warranty for used equipment is available for purchase from SFI. For details, visit [www.sonicfrontiers.com](http://www.sonicfrontiers.com) or contact SFI's Service Department.

## **INTERNATIONAL**

Outside of Canada and USA, warranty coverage terms are set and maintained by the Authorized Sonic Frontiers International / Anthem Distributor, not SFI. Exact terms and conditions may vary. Sonic Frontiers International (SFI) will provide warranty replacement parts to the original purchaser of the product, via the distributor, for a period of five (5) years, via surface mail. Additional courier freight charges will apply.

# APPENDIX A - UNIVERSAL REMOTE CONTROL CODES

The following is a list of codes at time of printing. For newer models not listed you can get the latest list of codes from our web site at: [www.sonicfrontiers.com](http://www.sonicfrontiers.com). **Note:** Codes can **only** be used with their respective Zone/Path/Component key. That is to say, a VCR code can not be programmed in the DVD Zone/Path/Component key. To enter a code:

1. Press the Zone/Path/Component key (e.g. **DVD**).
2. Press and hold **LEARN** until the LED flashes twice.
3. Enter the **four-digit code**. The LED should blink twice.

## Setup Codes for TV's:

AOC	0030, 0019
Admiral	0093, 0463
Aiko	0092
Akai	0030
Alaron	0179
Ambassador	0177
America Action	0180
Ampro	0751
Anam	0180
Audiovox	0451, 0180, 0092, 0623
Baysonic	0180
Belcor	0019
Bell & Howell	0154, 0016
Bradford	0180
Brockwood	0019
Broksonic	0236, 0463
CXC	0180
Candle	0030, 0056
Carnivale	0030
Carver	0054
Celebrity	0000
Cineral	0451, 0092
Citizen	0060, 0030, 0056, 0039, 0092
Concerto	0056
Contec	0180
Craig	0180
Crosley	0054
Crown	0180, 0039
Curtis Mathes	0047, 0054, 0154, 0051, 0451, 0093, 0060, 0030, 0145, 0056, 0016, 0039, 0166, 0466, 1147, 1347
Daewoo	0451, 0019, 0039, 0092, 0623, 0624
Daytron	0019
Denon	0145
Dumont	0017, 0019
Dwin	0720, 0774
Electroband	0000
Emerson	0154, 0236, 0463, 0180, 0282, 0178, 0019, 0179, 0039, 0177, 0623, 0624
Envision	0030
Fisher	0154
Fujitsu	0179
Funai	0180, 0179, 0171
Futurerech	0180
GE	0047, 0051, 0451, 0093, 0282, 0178, 0021, 0135, 1147, 1347
Gibraltar	0017, 0030, 0019
GoldStar	0030, 0178, 0019, 0056
Gradiente	0053, 0056
Grunpy	0180, 0179
Hallmark	0178
Harley Davidson	0179
Harman/Kardon	0054
Harvard	0180
Hitachi	0145, 0056, 0151
Infinity	0054
Inteq	0017
JBL	0054
JCB	0000
JVC	0053
KEC	0180
KTV	0180, 0030, 0039
Kenwood	0030, 0019
LG	0056
LXI	0047, 0054, 0154, 0156, 0178
Logik	0016

Luxman	0056
MGA	0150, 0030, 0178, 0019
MTC	0060, 0030, 0019, 0056
Magnavox	0054, 0030, 0179
Majestic	0016
Marantz	0054, 0030
Matsushita	0250
Megatron	0178, 0145
Memorex	0154, 0250, 0463, 0150, 0178, 0056, 0016
Midland	0047, 0017, 0051, 0039, 0135
Minutz	0021
Mitsubishi	0093, 0150, 0178, 0019
Motorola	0093
Multitech	0180
NAD	0156, 0178, 0166
NEC	0030, 0019, 0056
NTC	0092
Nikko	0030, 0178, 0092
Onwa	0180
Optimus	0154, 0250, 0166
Optonica	0093, 0165
Orion	0236, 0463, 0179
Panasonic	0051, 0250
Penney	0047, 0156, 0051, 0060, 0030, 0178, 0021, 0019, 0056, 0039, 0135, 1347
Philco	0054, 0463, 0030, 0145, 0019
Philips	0054
Pilot	0030, 0019, 0039
Pioneer	0166
Portland	0019, 0039, 0092
Prism	0051
Proscan	0047
Proton	0178, 0466
Pulsar	0017, 0019
Quasar	0051, 0250, 0165
RCA	0047, 0051, 0093, 0019, 0090, 0135, 1047, 1147, 1247, 1347
Radio Shack	0047, 0154, 0165, 0180, 0030, 0178, 0019, 0056, 0039
Realistic	0154, 0165, 0180, 0030, 0178, 0019, 0056, 0039
Runco	0017, 0030, 0603
SSS	0180, 0019
Sampo	0030, 0039
Samsung	0060, 0030, 0178, 0019, 0056
Samsux	0039
Sansei	0451
Sansui	0463
Sanyo	0154
Scimitsu	0019
Scotch	0178
Scott	0236, 0180, 0178, 0019, 0179
Sears	0047, 0054, 0154, 0156, 0178, 0179, 0056, 0171
Semivox	0180
Semp	0156
Sharp	0093, 0165, 0039
Shogun	0019
Signature	0016
Sony	0000
Soundesign	0180, 0178, 0179
Squareview	0171
Starlite	0180
Supreme	0000
Sylvania	0054, 0030
Symphonic	0171

TMK	0178, 0056, 0177
Tandy	0093
Technics	0051, 0250
Technol Ace	0179
Techwood	0051, 0056
Teknika	0054, 0180, 0150, 0060, 0019, 0179, 0056, 0016, 0039, 0092
Telefunken	0056
Toshiba	0154, 0156, 0060
Totevision	0039
Vector Research	0030
Victor	0053
Vidikron	0054
Vidtech	0178, 0019
Wards	0054, 0165, 0030, 0178, 0021, 0019, 0179, 0056, 0016
White Westinghouse	0463, 0623, 0624
Yamaha	0030, 0019
Zenith	0017, 0463, 0016, 0092

## VCR's:

Admiral	0048, 0209
Adventura	0000
Aiko	0278
Aiwa	0037, 0000
Akai	0041
America Action	0278
American High	0035
Asha	0240
Audiovox	0037
Beaumarck	0240
Bell & Howell	0104
Broksonic	0209
Broksonic	0184, 0121, 0209, 0002
CCE	0072, 0278
Calix	0037
Canon	0035
Carver	0081
Cineral	0278
Citizen	0037, 0278
Colt	0072
Craig	0037, 0047, 0240, 0072, 0271
Curtis Mathes	0060, 0035, 0041, 0162
Cybernex	0240
Daewoo	0045, 0278
Denon	0042
Dynatech	0000
Electrohome	0037
Electrophonic	0037
Emerex	0032
Emerson	0037, 0184, 0000, 0121, 0043, 0209, 0002, 0278
Fisher	0047, 0104
Fuji	0035, 0033
Funai	0000
GE	0060, 0035, 0048, 0240
Garrard	0000
Go Video	0526
GoldStar	0037, 0038
Gradiente	0000
HI-Q	0047
Harley Davidson	0000
Harman/Kardon	0081, 0038
Harwood	0072
Headquarter	0046
Hitachi	0000, 0042, 0041
Hughes Net. Sys.	0042
JVC	0067, 0041
Jensen	0041
KEC	0037, 0278

# APPENDIX A - REMOTE CONTROL CODES continued ...

KLH	0072
Kenwood	0067, 0041, 0038
Kodak	0035, 0037
LXI	0037
Lloyd's	0000
Logik	0072
MEI	0035
MGA	0240, 0043
MGN Technology	0240
MTC	0240, 0000
Magnasonic	0278
Magnavox	0035, 0039, 0081, 0000, 0149
Magnin	0240
Marantz	0035, 0081
Marta	0037
Matsushita	0035, 0162, 0454
Memorex	0035, 0037, 0048, 0039, 0047, 0240, 0000, 0104, 0209, 0046, 1162, 1262
Minolta	0042
Mitsubishi	0048, 0067, 0043
Motorola	0035, 0048
Multitech	0000, 0072
NEC	0104, 0067, 0041, 0038
Nikko	0037
Noblex	0240
Olympus	0035
Optimus	0037, 0048, 0104, 0162, 0454, 1062, 1162, 1262
Orion	0184, 0209, 0002
Panasonic	0035, 0162, 0225, 0454, 1162
Penney	0035, 0037, 0240, 0042, 0038
Pentax	0042
Philco	0035, 0209
Philips	0035, 0081
Pilot	0037
Pioneer	0067
Profitronic	0240
Proscan	0060
Protec	0072
Pulsar	0039
Quarter	0046
Quartz	0046
Quasar	0035, 0162, 0454, 1162
RCA	0060, 0035, 0048, 0240, 0042, 0149
Radio Shack	0000
Radix	0037
Randex	0037
Realistic	0035, 0037, 0048, 0047, 0000, 0104, 0046
Runco	0039
STS	0042
Samsung	0240, 0045
Sanky	0048, 0039
Sansui	0000, 0067, 0209, 0041, 0271
Sanyo	0047, 0240, 0104, 0046
Scott	0184, 0045, 0121, 0043
Sears	0035, 0037, 0047, 0000, 0042, 0104, 0046
Semp	0045
Sharp	0048
Shintom	0072
Shogun	0240
Singer	0072
Sony	0035, 0032, 0000, 0033
Sylvania	0035, 0081, 0000, 0043
Symphonic	0000
TMK	0240
Tatung	0041
Teac	0000, 0041
Technics	0035, 0162
Teknika	0035, 0037, 0000
Thomas	0000
Toshiba	0045, 0043
Totevision	0037, 0240
Unitech	0240
Vector	0045
Vector Research	0038
Video Concepts	0045

Videosonic	0240
Wards	0060, 0035, 0048, 0047, 0081, 0240, 0000, 0042, 0072, 0149
White Westinghouse	0209, 0278
XR-1000	0035, 0000, 0072
Yamaha	0038
Zenith	0039, 0000, 0209, 0033

## TV/VCR Combos:

American High	0035 (TV - 0051)
Brocksonic	0002, 0294
Colt	0072
Curtis Mathis	0035 (TV - 0051)
Daewoo	0278
Emerson	0002, 0294, 0479
Funai	0000
GE	0035 (TV - 0051), 0060 (TV - 0047), 0048 (TV - 0093), 0240
Hitachi	0035 (TV - 0051), 0000
HQ	0000
Lloyds	0000
MGA	0240
Magnavox	0081 (TV - 0054), 0035 (TV - 0051), 0000
Magnin	0240
Memorex	0037, 0162 (TV - 0250)
Mitsubishi	0048 (TV - 0093)
Orion	0002, 0294, 0479
Panasonic	0035 (TV - 0051), 0162 (TV - 0250)
Penney	0035 (TV - 0051), 0240, 0162 (TV - 0250)
Quasar	0035 (TV - 0051), 0162 (TV - 0250)
RCA	0060 (TV - 0047), 0035 (TV - 0051), 0048 (TV - 0093)
Sansui	0000, 0479
Sanyo	0240
Sears	0000, 0037
Sharp	0048 (TV - 0093)
Sony	0032 (TV - 0000)
Symphonic	0000
Zenith	0000

## Cable Converters:

ABC	0003, 0008, 0014, 0017, 0007, 0011, 0013
Allegro	0153, 0315
Archer	0153, 0797
Bell & Howell	0014
Century	0153
Citizen	0153, 0315
Comtronics	0040
Contec	0019
Eastern	0002
Emerson	0797
Everquest	0015, 0040
Focus	0400
Garrard	0153
Gemini	0015
General Instrument	0476, 0276, 0011, 0810
GoldStar	0144, 0040
Goodmind	0797
Hamlin	0020, 0259, 0009, 0034
Hitachi	0011
Hytex	0007
Jasco	0015, 0153, 0315
Jerrold	0003, 0012, 0476, 0276, 0014, 0015, 0011, 0810
Memorex	0000
Movie Time	0063
NSC	0063
Oak	0019, 0007
Optimus	0021
Panasonic	0000, 0107, 0021

Paragon	0000
Philips	0153
Pioneer	0144, 0533
Popular Mechanics	0400
Pulsar	0000
Quasar	0000
RCA	0021
Radio Shack	0015, 0315, 0797, 0883
Recoton	0400
Regal	0020, 0259
Regency	0002
Rembrandt	0011
Runco	0000
SL Marx	0040
Samsung	0144, 0040
Scientific Atlanta	0008, 0477, 0017, 0877
Signal	0015, 0040
Signature	0011
Sprucer	0021
Starcom	0003, 0015
Stargate	0015, 0040, 0797
Starquest	0015
TV86	0063
Televue	0040
Tocom	0012, 0013
Toshiba	0000
Tusa	0015
Unika	0153
United Artists	0007
Universal	0153, 0191
Viewstar	0063
Zenith	0000, 0525
Zentek	0400

## Satellite or DBS Receivers:

AlphaStar	0772
Chaparral	0216
Echostar	0775
Expressvu	0775
General Instrument	0627, 0361, 0869
HTS	0775
Hitachi	0819
Hughes Net. Sys.	0749
JVC	0775
Jerrold	0627, 0361
Magnavox	0724, 0722
Memorex	0724
Next Level	0869
Panasonic	0701
Philips	0724, 0722
Primestar	0627, 0361
RCA	0566, 0143, 0392, 0855
Radio Shack	0869
Realistic	0052
Sony	0639
Star Choice	0869
Toshiba	0790
Uniden	0724, 0722, 0052
Zenith	0856

## CD Players:

Aiwa	0157, 0124
Burmester	0420
California Audio Lab	0029
Carver	0157, 0179, 0437
DKK	0000
Denon	0003, 0873
Emerson	0305
Fisher	0179, 0174
Garrard	0420, 0393
Genexxa	0032, 0305
Harman/Kardon	0157, 0173
Hitachi	0032
JVC	0072
Kenwood	0028, 0037, 0190, 0681, 0826
Krell	0157
LXI	0305
Linn	0157
MCS	0029
MTC	0420
Magnavox	0157, 0305
Marantz	0029, 0157, 0180

# APPENDIX A - REMOTE CONTROL CODES continued ...

Mission	0157
NSM	0157
Nikko	0174
Onkyo	0101, 0868
Optimus	0000, 0032, 0179, 0305, 0037, 0420, 0145, 0468, 0437
Panasonic	0029, 0303
Parasound	0420
Philips	0157, 0626
Pioneer	0032, 0305, 0468, 0244
Proton	0157
QED	0157
Quasar	0029
RCA	0179, 0305, 0053, 0764
Realistic	0179, 0420, 0180
Rotel	0157, 0420
SAE	0157
Sansui	0157, 0305
Sanyo	0179
Scott	0305
Sears	0305
Sharp	0037, 0180, 0861
Sherwood	0180
Sony	0000, 0185, 0490
Soundesign	0145
Tascam	0420
Teac	0420, 0393, 0174, 0180
Technics	0029, 0303
Victor	0072
Wards	0157, 0053
Yamaha	0036, 0187
Yorx	0461

## **DVD Players:**

Harman/Kardon	0582
JVC	0558
Kenwood	0534
Magnavox	0503
Mitsubishi	0521
Onkyo	0503
Panasonic	0490
Philips	0503, 0539
Pioneer	0525, 0571
Proscan	0522
RCA	0522
Samsung	0573
Sony	0533
Technics	0490
Theta Digital	0571
Toshiba	0503
Yamaha	0490, 0545
Zenith	0503, 0591

## **LDPlayers:**

Denon	0059
Mitsubishi	0059
NAD	0059
Pioneer	0059
Sony	0193, 0201

## **Cassette Decks:**

Aiwa	0029, 0197
Carver	0029
Denon	0076
Harman/Kardon	0182, 0029
JVC	0244, 0273
Kenwood	0070
Magnavox	0029
Marantz	0029
Onkyo	0135, 0282
Optimus	0027, 0220
Panasonic	0229
Philips	0029
Pioneer	0027, 0220, 0099
Sansui	0029
Sony	0243, 0170, 0291
Technics	0229
Victor	0273
Wards	0027
Yamaha	0097, 0094

## **Stereo Tuners or Receivers:**

ADC	0531
Adcom	0616
Aiwa	0158, 0189, 0121, 0405
Akai	0224
Capetronic	0531
Carver	0189, 0008, 0042, 0360
Casio	0195
Clarinet	0195
Curtis Mathes	0080
Denon	0004
Emerson	0424
Fisher	0042, 0219, 0360
Garrard	0463, 0424
Harman/Kardon	0110, 0189, 0891
JBL	0110
JVC	0074
Kenwood	0027, 0186, 0042, 0077
Koss	0424
LXI	0181
Linn	0189
Lloyd's	0195
MCS	0039, 0346
Magnavox	0531, 0189, 0195, 0391
Marantz	0039, 0189
Modulaire	0195
NAD	0320
Nakamichi	0097, 0347
Onkyo	0135
Optimus	0531, 0670, 0186, 0042, 0177, 0181, 0219, 0738, 0801, 1023
Panasonic	0039, 0309
Penney	0195
Philips	0189, 0391
Pioneer	0531, 0014, 0150, 0630, 0080, 1023
Quasar	0039
RCA	0531, 0054, 0346, 0360, 0530
Realistic	0195, 0163, 0181
Sansui	0189, 0346
Sanyo	0219, 0801
Scott	0163, 0322
Sharp	0186
Sherwood	0491, 0502
Sony	0158, 0168, 0474
Soundesign	0670
Teac	0463, 0163
Technics	0039, 0309, 0208
Victor	0074
Wards	0158, 0014, 0189, 0080, 0054
Yamaha	0176, 0186
Yorx	0195
Zenith	0857

## **Stereo Amplifiers:**

Aiwa	0406
Carver	0269
Curtis Mathes	0300
Denon	0160
Harman/Kardon	0892
JVC	0331
Linn	0269
Magnavox	0269
Marantz	0269
Panasonic	0308
Philips	0269, 0892
Pioneer	0013, 0300
Sony	0220, 0689
Technics	0308
Victor	0331
Wards	0013
Yamaha	0354

## **Home Automation:**

GE	0240
Lutron	0597
One For All	0167
Radio Shack	0240
Security System	0167

Universal X10	0167
X10	0167

## **DBS Audio Services:**

Aiwa	0010, 0159, 0404
Fisher	0052
Harman/Kardon	0477
JBL	0477
JVC	0073
Jerrold	0459, 0520
RCA	0056
Scientific Atlanta	0460
Sony	0010, 0159
Starcom	0459

## **Video Accessories:**

Archer	0160
GC Electronics	0160
Jebsee	0160
Rabbit	0081
Radio Shack	0160
TeleCaption	0171



# SPECIFICATIONS

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## PREAMPLIFIER SECTION

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<b>Input Impedance</b>	
Direct .....	25 k $\Omega$
All Others .....	20 k $\Omega$
<b>Output Impedance</b>	
Main-RCA.....	300 $\Omega$
Other-RCA.....	51 $\Omega$
XLR .....	600 $\Omega$
<b>Rated Input</b> .....	2.0 Vrms
<b>Maximum Input</b>	
Direct .....	3.3 Vrms
Others.....	5.3 Vrms
<b>Rated Output</b> .....	2.0 Vrms
<b>Maximum Output</b> .....	5.3 Vrms
<b>Headphone Output</b> .....	100 mW into 32 $\Omega$ @ 0.2% THD+N
<b>Volume Range</b>	
Main .....	-95.5 dB to +31.5 dB
Zone2 & Headphone .....	-70.0 dB to +10.0 dB
<b>Volume Resolution</b>	
Main .....	0.5 dB
Zone2 & Headphone.....	1.25 dB
<b>Crossover</b>	
High-Pass Slope (Small Speaker Setting) .....	12 dB/octave (2nd order)
Low-Pass Slope (Subwoofer).....	24 dB/octave (4th order)
Crossover Frequency (Adjustable) .....	60-160 Hz
<b>Controls</b>	
Bass Center Frequency .....	200 Hz
Treble Center Frequency .....	2 kHz
Range .....	+/- 12 dB
<b>Channel Separation</b> (at 20 kHz).....	58 dB
<b>Crosstalk Between Inputs</b> (at 20 kHz).....	78 dB

## MAIN (RCA & XLR)

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<b>Frequency Response</b>	
Direct Inputs .....	20 Hz to 20 kHz +0, -0.2 dB
All Other Analog Inputs .....	20 Hz to 20 kHz +0, -0.4 dB
Digital Inputs.....	20 Hz to 20 kHz +0, -0.3 dB
<b>THD+N @ Rated Input &amp; Output</b>	
Direct Inputs.....	0.01%
All Other Analog Inputs.....	0.02%
Digital Inputs .....	0.02%

# SPECIFICATIONS continued ...

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## IMD (CCIF) @ 15 kHz & 16 kHz

Direct Inputs. ....	0.001%
All Other Analog Inputs. ....	0.002%
Digital Inputs. ....	0.001%

## S/N ref. 2.0 Vrms A-weighted

Direct Inputs. ....	98 dB
All Other Analog Inputs. ....	96 dB
Digital Inputs. ....	96 dB

## ZONE2

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Frequency Response. ....	20 Hz to 20 kHz +0, -0.2 dB
THD+N (at Rated Input & Output) . . . . .	0.08%
IMD (CCIF at 15 kHz & 16 kHz). . . . .	0.08%
S/N Ratio (ref. 2.0 Vrms A-weighted) . . . . .	97 dB

## FM TUNER SECTION

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### Sensitivity

50dB S/N. ....	13 dB $\mu$ typ., 25 dB $\mu$ max.
IHF. ....	10 dB $\mu$ typ., 20 dB $\mu$ max.

### Signal to Noise Ratio

Mono. ....	75 dB typ., 65 dB max.
Stereo. ....	69 dB typ., 60 dB max.

### Distortion

Mono. ....	0.2% typ., 1.0% max.
Stereo. ....	0.3% typ., 1.5% max.

Stereo Separation. ....	40 dB typ., 25 dB min.
Adjacent Channel Selectivity (+/- 400 kHz). . . . .	70 dB typ., 60 dB min.
Frequency Response. ....	20 Hz to 15 kHz +/- 1 dB

## AM TUNER SECTION

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Sensitivity (20 dB S/N) . . . . .	49 dB $\mu$ typ., 56 dB $\mu$ max.
Signal to Noise Ratio. ....	50 dB typ., 43 dB min.
Distortion. ....	0.7% typ., 2.0% max.
One Signal Selectivity (+/- 10 kHz). . . . .	24 dB typ., 18 dB min.
Frequency Response (0 dB ref. 600 Hz) . . . . .	40 Hz to 4 kHz +0, -13 dB

## VIDEO SECTION

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### Bandwidth

Composite & S-Video. ....	6 MHz +/- 0.3 dB
Component. ....	30 MHz +/- 0.4 dB, 50 MHz -3 dB

All video inputs and outputs are 75  $\Omega$ , 1.5 Vp-p, and work with either NTSC or PAL / SECAM signals according to factory setting. Component inputs and outputs work with any standard requiring bandwidth up to 30 MHz, including Component-RGB, HDTV, line doublers, and line quadruplers.

# SPECIFICATIONS continued ...

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## DIGITAL AUDIO

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All digital audio inputs and outputs are to S/PDIF electrical (75  $\Omega$ , 0.5 Vp-p), S/PDIF optical (Toslink), or AES / EBU (110  $\Omega$ , 5 Vp-p) standards as appropriate.

**Processor** ..... Motorola 56362 @ 108MHz

### Audio Converters

Analog to Digital. .... Crystal CS5396  
Digital to Analog. .... Burr-Brown PCM1728

## CONTROL

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**RS-232 Connection** ..... One DB-9F connector (straight-wired)

**RS-232 Port Configuration** ..... Baud rate (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200),  
8 data bits, 1 stop bit, no parity bits, flow control (RTS, CTS, NONE).

### Trigger Outputs

Trigger 1, 2 ..... 50 mA @ 12 VDC  
Trigger 3 ..... 200 mA @ 12 VDC  
Sequential Delay ..... 250 ms

## DIMENSIONS

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**Width** ..... 17 1/4 inches (43.8 cm)  
**Height** (including feet). .... 5 7/8 inches (14.8 cm)  
**Depth** (not including volume knob and rear panel jacks) ..... 11 1/2 inches (29.2 cm)  
**Weight** ..... 23.7 lbs. (10.8 kg)

## MISCELLANEOUS

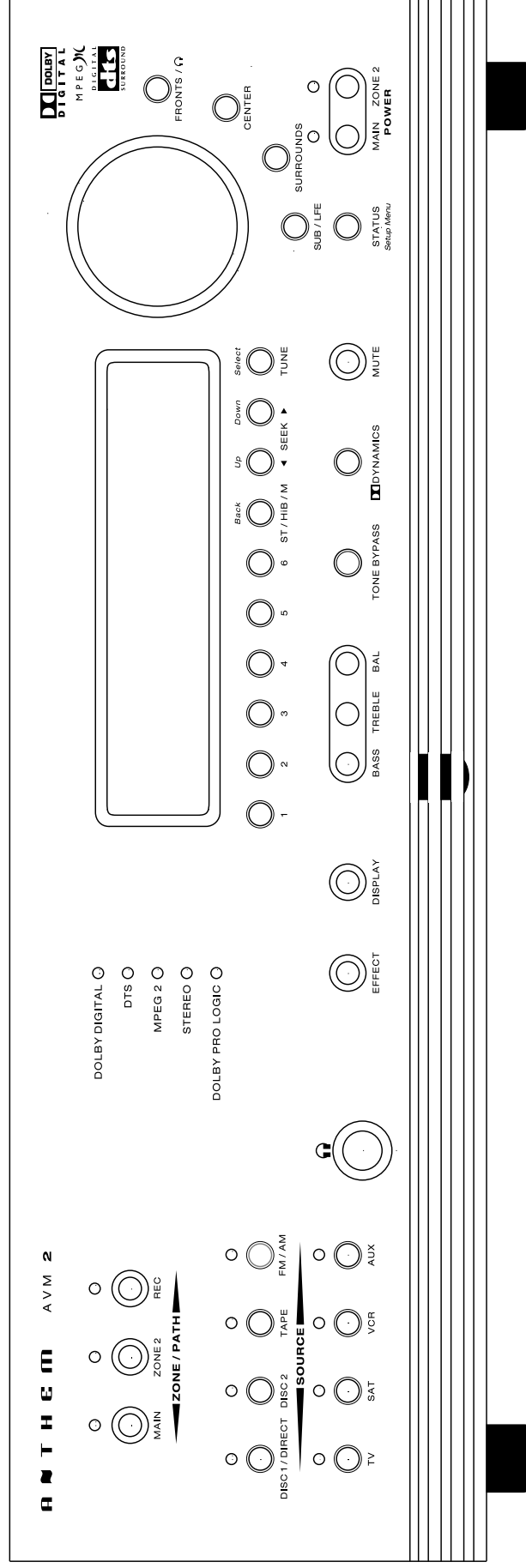
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**Supply Voltage** ..... 105-130 V, 60 Hz only

**Power Consumption** ..... 80 VA or less

**Fuse** ..... 1.0 Amp 5mm slow blow

# THE BIG PICTURE FRONT PANEL



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# AN THEM

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2790 BRIGHTON ROAD, OAKVILLE, ONTARIO, CANADA L6H 5T4 TEL: (905) 829-3838 FAX: (905) 829-3033  
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